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## YOGA STUDIES

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Y O G A  
ĀSANAS SIMPLIFIED



# Y O G A ĀSANAŚ SIMPLIFIED

BY

SHRI YOGENDRA

THE FOUNDER PRESIDENT OF THE YOGA INSTITUTES IN  
INDIA AND AMERICA, EDITOR OF THE SCIENTIFIC  
YOGA SERIES, YOGA STUDIES AND ILLUSTRATED  
JOURNAL YOGA ETC, ETC



THE YOGA INSTITUTE  
SANTA CRUZ BOMBAY, 25

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for The Yoga Institute

## P R E F A C E

YOGA is the most ancient cultural heritage of India. What is vital in Yoga is not the theory—including its many ramifications which multiplied with ages—but its secret technique for practice which passed from the teacher to the disciples. The credit for pioneering the scientific study of this yoga technique however goes to India's oldest technical institute on this subject, The Yoga Institute of Santa Cruz, Bombay.

This Institute has been working in a rather silent way since its foundation in 1918 for the practical revival of the science of Yoga. Here, during the past nearly forty years, 2,000 students have been trained in the technique of Yoga and over 5,000 patients have been successfully treated. Three Documentary films have been produced on Yoga under the technical guidance of this Institute—the last by the Government of India. Over a million copies of its publications and other literature are in circulation throughout the world besides their translations in other languages. It has cultural contacts with practically all the countries of the world.

The poser—how to study Yoga in the absence of a practical teacher—has been successfully clinched by the Institute through its authorized publications. These volumes of the *Yoga Studies* are, in fact, concise popular manuals on the selected aspects of yoga culture and science for progressive study especially adapted to the modern understanding



## PREFACE

and psychophysiological need of both the Eastern and Western readers of either sex, of age, of race, and of religion

These studies are intrinsically different from the bulk of literature passing under the name of Yoga written by those who lack authority, traditional practical training, both objective and subjective, experience of a scientific nature, the close acquaintance of academic fundamentals, and the inheritance of the secret technique directly from a genuine teacher. Obviously therefore they have failed to inspire confidence except among the unwary. These studies however are strictly based upon the synthetic, vital, operative and research conclusions on the ancient yoga texts and traditions besides being presented in the light of modern sciences and are thus meant to serve as the reliable practical guides to the earnest students of Yoga. All important academic and scientific statements are essentially founded upon the data available in the standard texts of this Institute—the *Scientific Yoga Series*. That they lend to further researches is self evident.

And lastly, it is for the first time that the highly priced standard editions of the publications of this Institute are being published for the benefit of the masses as pocket editions at prices within the reach of all. This volume is the revised and enlarged edition of the original title *Yoga Physical Education* (for men)

THE PUBLISHERS

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वपुः कृशत्वं वदने प्रसन्नता ।

नादस्फुटत्वं नयने सुनिर्मले ॥

अरोगता बिबुजयोऽग्निवीपन ।

मादोविशुद्धिर्हृठयोगलक्षणम् ॥

SLIM (lissom) body, joyous face, sonorous voice, sparkling eyes, positive good health, virility, exuberance of vitality and radiance, and purity of the nervous system are (a few of) the (physical) characteristics (endowed by the practice, of Hathayoga

—*Hathayogapradipika*, with *Jyotsna* १, III, 78



## CHAPTER I

### A BRIEF PERSPECTIVE OF YOGA

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*Ancient Cultural Heritage—What Yoga is Not—What Yoga Really is—Tradition of Yoga Education—Ancient and Modern Method of Instruction.*

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#### 1 ANCIENT CULTURAL HERITAGE

Yoga occupied in the cultural history of India from time immemorial an unparalleled and distinct recognizance as the one and only practical system of physical, mental, moral and spiritual culture. Through its elaborate system of practical training or *kriyā yoga*, it sublimates man to divinity by a scientific scheme of education which affects not only the conscious but also the subconscious planes. Its elaborate technique of physical education, hygiene and autotherapy endows exuberant health contributive to longevity; its intricate psychosomatic and mental practices habituate one to moral and mental discipline; and its subliminal psychic education and processes finally culminate into positive and lasting happiness and peace.<sup>1</sup>

~ In ancient India, therefore, every known school of thought, every creed of symbolism and diverse

1 Cf. *Science of Yoga*, by Shri Yogendra, 1936 Edn. pp. 42ff.

traditions of religion in spite of their obvious contradictions accepted Yoga as an absolute *sine qua non* of the ultimate achievement in life—metaphysically, and of the religious endeavours—theologically. Even to positive sciences such as anatomy, physiology, biology, therapeutics, psychology, mental hygiene, psychotherapy, psychoanalysis and others and to cultural arts<sup>2</sup> such as music, dancing, painting,<sup>1</sup> sculpture, and even literature, Yoga had been and is a constant source of inspiration. It has therefore been held that the highest is achievable only through Yoga.

Theoretical Yoga was sprinkled in and throughout most of the ancient texts belonging to the various metaphysical schools and the theological traditions representing the pre-Aryan and Aryan culture, but the inestimable technique of practical training both for the body and mind always remained a secret. The yoga technique thus flourished under its own intrinsic vitality, zealously guarded by the venerable yogins who handed over this sacred treasure-chest of knowledge to the most deserving disciples only. This process of imparting knowledge on yoga technique—the science and art of living—has been in vogue for thousands of years. While such traditions of yoga education served the purpose of cultural purity, because of its implied secrecy it also gave rise to a species of mysticism and inertia which gradually resulted in confusion with regard to its rightful

2 Cf *The Ideals of Indian Art*, by E. B. Havell, p. 32.

## WHAT YOGA IS NOT

place in the process of civilization and for the progress of society <sup>3</sup>/

## WHAT YOGA IS NOT

In consequence, various shades of misunderstanding seem to have prevailed and still continue to prevail regarding Yoga—its place in the life of man, his evolution and his achievements—not only in foreign lands but most unfortunately even in India, the place of its birth. The ignorant and the misinformed have come to believe that it is some form of white or black magic, obscure sorcery, pseudo supernatural trickery, physical and mental mortification or orgies of secret ritualism through which, in some unaccountable manner, miraculous feats are performed. These misconceptions thus have frightened many, and they are still frightening not a few. The superstitious have come to regard it with awe and reverence, almost with fear.

Added to this, much harm has also been done by the circulation of such tendentious and ill-founded opinions as suggest that the practice of Yoga is extremely dangerous, that the same is intended for only a few who have renounced the world, that the technique usually employed consists of injurious and irrational acrobaticism of body and mind, and that it is unsuited to all others except the Hindu mind. The laymen both in India and elsewhere therefore remained indifferent

3 Cf. *About Yoga* Prospectus of The Yoga Institute p. 3

to all its virtues and some actually ahhor it as something anti-social.<sup>4</sup> In fact, such popular illusions are the outcome of ignorance and there is really nothing in Yoga to associate such beliefs.<sup>5</sup>

### WHAT YOGA REALLY IS

Yoga, interpreted in rational synthesis, represents the way of life which endows perfect health—physical, mental, moral and spiritual—so that what is ignoble in man is sublimated to what is most noble in him.<sup>6</sup> To achieve this great art and science of life, a comprehensive practical system of self-culture has been formulated which through interchangeable harmonious development of one's body, mind and psychic potencies ultimately leads to physical well-being, mental harmony, moral elevation and habituation to spiritual consciousness.

(a) *Yama and Niyama*: As a first principle, it advocates and insists on the daily practice of a code of universal ethics emphasizing its need as a disciplinary training till the whole process of moral elevation becomes a part of his life and living. The many scientific reasons advanced by Yoga for such a moral conduct are not merely logical and convincing but they actually demonstrate in the light of modern sciences the physical, mental

4 Cf. *Hindu Ethics*, by J. Mckenzie, pp. 251ff.

5 Cf. *Yoga*, Vol. I, p. 4; Vol. II, pp. 101f.

6 Cf. *Vyāsabhāṣya*, II, 30.

and psychic advantages of a wholly moral life. It however believes in a graded course of training—from *anuvrata* to *mahavrata*, thus recognizing fully the weakness of flesh—by permeating affects on both the conscious and the subconscious planes through a series of lessons in negative and positive virtues, technically known as restraints (*yama*) and observances (*niyama*) .

(b) *Asana* Good health, according to Yoga, is not only an important requisite for further training but the same is purposely looked upon as a sacred duty. Yoga therefore insists also on the primary need of day-to-day good health (*arogyam ca dine dine*) both sedative and positive. This has to be achieved through its own system of physical education which *inter alia* promotes moral and mental discipline and psychic absoluteness. The physiological aspect of Yoga (*ghatasya yoga*) first helps one to get healthy—if he is not—through the aid of yoga therapeutics and then keeps him healthy through an elaborate system of physical culture including hygiene, dietetics, and processes of autoimmunization.

The methodical study of scientific Yoga thus rightly begins with postural training and rhythmic breathing associated with preventive measures and autotherapy, process of nerve purification (*naḍisuddhi*), and body-control for the purpose of longevity. It also includes the technique of rejuvenation through hormonal and humoral stimulation, eliminative and nutritive hyperenergia.

followed by complete rest to all the vital organs in a state of quasi-hibernation (*khecari*). This aspect of Yoga is technically known as *āsana* elaborated into a very comprehensive scheme of physical culture.

(c) *Prāṇāyāma* : Yoga has demonstrated that its system of physical culture in conjunction with respiratory and nervous control enables an individual to regulate his biologic living by conservation and control of bionergy (*prāṇa*); and the physical miracles exhibited oftentimes by misguided demonstrators and cheap vendors of Yoga at this stage of development are merely the results which follow by accident or design the few attainments in the practice of *prāṇāyāma* or the regulation of bionergy. The stoppage of pulse and heart, indifference to heat and cold, the act of burying alive underground, immunity to effects of chemicals, of thirst, of hunger and of natural elements are a few of the powers that accrue the mastery over *prāṇāyāma*. The genuine student of Yoga, however, looks upon these achievements as mere obstacles which have to be scrupulously avoided.<sup>7</sup>

(d) *Pratyāhāra* : With the physiological activities well harmonized and under control, the next thing to follow is to fill the gap between the body and mind through psychosomatic training with a view to controlling the external and internal senses

7 Cf. *Yogasūtra*, III, 16 ff. to be read with III, 36.

uch affect the equanimity and peace of mind us is to be achieved through a series of graded psychosomatic efforts of withdrawing the mind from the sense objects. They consist of relaxation, neutralization, visualization, dissociation, introversion and a variety of similar processes specially designed to aid the individual in freeing himself from sensual, emotional, environmental and mental distractions.

At this stage, through autosuggestions, contentions on the negative and positive virtues and the opposites (*diandia*), the metaphysical reflections and similar technique of advanced yoga, the yogin cultivates an universal outlook in his practical way of life—rising above all conditioned reflexes, inhibitions and environmental influences common to human nature. The catholic spirit thus infused in him readjusts his mental life and bestows upon him the gift of healthy mindedness. The composite endeavour termed *pratyahara* or the process of abstraction which is an intermediary stage bridging the vacuum between the outer (*bahiranga*) and inner (*antaranga*) Yoga.<sup>8</sup>

(c) *Dharaṇa and Dhyana* Progressively the purity of the human nature and therefore of the mind has to be achieved through the good health of the body and the control of the senses for man is more than his body and senses. In Yoga, the

<sup>8</sup> Cf. *Yogasutra* III 7f

control of the mind is followed up through the control of the senses. The course includes methods of pure and applied psychology, psychoanalysis, parapsychology, mental hygiene and therapeutics, and psychic unfoldment with a view to ultimately exploiting all conscious and subconscious potentialities so as to reach the highest. The preliminary stage begins with concentration (*dhāraṇā*) aided by a variety of psychosomatic measures which by habituation leads to the continued flow of meditation (*dhyāna*). The inordinate technique—subtle as such a training is—covers a very vast field of mental culture projecting into the higher levels of consciousness. Psychic experience has demonstrated that a variety of manifestations such as telepathy, television, and similar supranormal phenomena make their appearance during these stages but, in Yoga, they have to be scrupulously avoided if the goal of consciousness absolute (*kaivalya*) is to be reached.<sup>9</sup>

(f) *Samādhi*: Trance-consciousness wherein the yogin remains unmoved by physical and mental afflictions of whatsoever nature is the final stage of Yoga known as *samādhi*. This consummation of Yoga has been described variously as a state of uninterrupted joy, peace eternal, consciousness absolute and concrete self-realization. Intuition and other transcendent powers of the mind and even of the body—the animated suspension of life and freeing oneself from the laws of natural

<sup>9</sup> Cf. *Ibid.*, III, 35, 36.



causation etc.—follow as a result of the awakening of the human energy potential (*kundalinī*).

The early preliminaries of this supreme stage of samādhi contribute to what is immortal in art, literature, science and every department of knowledge and action. Although the unwary refer to this psychic state as mysticism, especially with Yoga, it is not at all the result of unbalanced emotionalism or accident but the positive endowment of a scientific training and therefore immutable. Then after all the mental modifications have been restrained and the accumulated potency-desire complexes (*samskāraśāyana*) remain annihilated, and even omniscience and omnipotence have ceased to be prized, does the yogin attain the final state of pure intelligence—the original state of norm—wherein once established—there remains nothing further to be known or achieved.<sup>10</sup>

It is thus clear that Yoga really is a complete practical system of self-culture which aims at interrelated harmonious development of one's body, mind and dormant psychic potencies. In fact, there is nothing dubious or mystic about it. On the contrary, it is a positive science of man whose practices are founded on the unchangeable Laws of Nature and are, therefore, open to laboratory and clinical tests of which the modern sciences may

10 This exposition is a summary of a lecture by the Founder based on the eightfold path accepted as a rational synthesis by all schools of Yoga outlined in the *Tegāsūtra* and elaborated by the later authorities Cf *Bombay Chronicle*, April 18, 1937.

be capable. In short, Yoga is a science, philosophy and way of life in one which neither admits of nor encourages dogmas because it is intensely rational.

Above all, it is the only practical, scientific and catholic culture that is not limited to any sex, race, nationality, religion or creed. One may continue to be a Hindu, a Christian, a Mohammedan, a Russian or an American, a Socialist or a Fascist, a Theosophist or a Freemason or whatever one happens to be or styles himself and he can still follow Yoga and receive the fullest benefit. It does not require one to disown his beliefs, creed, religion or heritage.

Further, the yoga technique is applicable to all grades of aspirants so that the sick and the healthy, the good and the bad, the intelligent and the ignorant, the believer and the non-believer can profit equally by its practice. Any person, irrespective of what his or her stage in life is, can begin the study whenever desired according to what appeals most, for the science of Yoga is universal in its application and hence all-embracing.

## TRADITION OF YOGA EDUCATION

In India, the ancient civilization had its birth, blossoming, and preservation in the forests. This historical fact has been aptly illustrated in the verses of the Yajurveda<sup>11</sup> which refer to the ancient

<sup>11</sup> *Upahvart girigant sangame ca nadinām dhyo vipra ajupata.* Cf. *Vajasaneyi Yajurveda*, XXVI, 15

seers engaged in the acquisition of knowledge in the heart of forests, on the hill tops, in the caves, around the river banks, dwelling in their humble hermitages surrounded by the vast beauty of Nature

(a) *Forests—Cradle of Civilization* Thus says Buddha, the great yogin, to his disciples "Have you never heard it said by wanderers who were venerable, aged, your teachers and the teachers of your teachers about the ancient Arahants, Buddhas and so forth who sought the remote and lonely recesses of the forest, where noise, where sound there hardly is, where the breezes from the pastures blow, yet which were safely hidden from the eyes of men, meet for self communion, even as I (Buddha) do now?"<sup>12</sup>

In the words of poet Tagore, "Thus in India it was in the forests that our civilization had its birth. It was surrounded by the vast life of Nature, was fed and clothed by her, and had the closest and most constant intercourse with her varying aspects."<sup>13</sup>

(b) *Asramas as Universities* In the past, those who wanted to realize or had already realized the aim and end of life usually retired into solitude. There, near their solitary abodes, even in the remotest forest gathered the seekers of knowledge. The disciples included the rich and the poor, the king and the beggar, the old and the young,

12 Cf. *Digha Nikaya* III, 54

13 Cf. *Sadhana* by Rabindranath Tagore, p. 4

both men and women from all levels of society who had left their distant homes, their mundane possessions, and all their earthly attachments in search of Truth. The modest huts, the solitary forest homes and caves carved in rocks—often inaccessible as a challenge to the devout—wherein the masters dwelt served as the medium of knowledge, more so of Yoga, that quenched the thirst of many a student, and thus the traditional heritage of Indian culture was handed down from generations to generations. These unadorned hermitages—except for the vast beauty of Nature around—referred to as *ashramas* had no pomp such as the modern universities display. The teachers taught not because they were paid but because they considered it their duty to impart their knowledge to the deserving, and the students were accepted not because they subscribed their fees in kind but because they were found fit for such studies. Alike the teachers even the students were an example in themselves for they lived the very life they preached and pursued, and the conglomeration of students gathered there not for acquiring knowledge that was to bring their daily bread but to know the Reality and to live that Reality. From all available cultural records, it is evident that in ancient India, both the masters and the disciples valued not the quantity but the quality of knowledge.<sup>14</sup> J

14 Can we afford to forget that knowledge is infinite and our ignorance abysmal? It matters little what the quantity of one's knowledge is the main thing is the knowledge itself for a fleece

Indian culture was and, to some extent, still is essentially esoteric available only to the earnest students (*mumuksu*) and imparted solely through the medium of personal contact with the teachers (*guru-parampara*)<sup>15</sup> The little that is known through its exoteric metaphysical systems—especially in the case of Yoga—does not represent even a fraction of allness that has to be intrinsically lived The texts of various systems of philosophy serve merely as indices and, therefore, are void of essential details of technique meant for the practical students For this reason, the real centres of learning were the hermitages where the teachers well-versed in practical details lived the very knowledge they preached and guided the students in their respective training courses

(c) *Yoga Monasteries* Especially insofar as the yoga training is concerned, the available texts prove to be of very little value because most of the practices remain a secret knowledge with the teachers and these have therefore been confined generally amongst the circle of yogins who would communicate the actual technique only to the most deserving pupils The genuine yogins living in the solitude of mountains were hardly accessible, and there are today only a very few who would be eager to learn Yoga under conditions which may

is just as full of mystery and wonderment as an elephant The question is Have you the knowledge? Cf *Life Problems* 3rd Edn by Sri Yogendra, pp 20f

15 Cf *Yoga* Vol V, iii pp 9, 10f iv pp 7, 8f

be imposed upon them. Even in ancient India, the yoga monasteries were few and far apart, and the training in the technique of Yoga, for all practical purposes, became extremely difficult.

Sporadic efforts to save Yoga from such an enigmatic existence by investigations into the subtleties of its metaphysics and theories have won a measure of success in keeping alive certain scholastic interest in the subject, but the vital technique for practice remained and still remains obscure and elusive as ever. The present monasteries have lost their antiquated dignity and vigour and what is taught there is of doubtful origin and value. The recent spurt of the so-called *yogāśramas* and centres of health and physical training patronized by the unwary has caused a further slump in the true perspective—from the sublime to the ridiculous.

### ANCIENT AND MODERN METHOD OF INSTRUCTION

Furthermore, the contrast between hermitages and modern universities as centres of learning is also very vital for the latter fail to supply the necessary environments contributive to the way of life in conformity with the teachings, under constant supervision and contact of the teacher. As a result, there is much barren superfluity of academic and mechanized knowledge which sticks to the students as an objective additive of decoration without any harmony being established between the basic understanding of life and

habitation to such a living This duplicity in the acquisition of knowledge and its actual practice in day-to-day life is responsible for much that is hypocritical, unpleasant and suicidal

✓ The institution of yoga education in ancient India had a different value, was applied differently, and had therefore a different method of imparting it The significance of masters and their abodes of learning could be appreciated only by those who realize the difference between theory and practice, between ornamental and applied knowledge, and between mechanized education and the integrated way of life To all forms of learning which belong to the former category and what is generally available at the modern university level, Yoga supplements the latter The hermitages represent the integral quality which moulds personality, while the universities impart quantitative training to the masses What is needed in the changed context of the world at present is the harmonious synthesis of what is best in each

Convinced that given the necessary rational, utilitarian and scientific interpretation Yoga some day will emerge as the scientific world culture teaching healthier and surer methods of living than what material civilization has so far done, the scientific Yoga movement under the auspices of The Yoga Institute was first launched by the author four generations ago It was evident then that the orthodox tradition of imparting yoga education at the hermitages by requiring

## A BRIEF PERSPECTIVE OF YOGA

the students to leave their homes—no matter how essential or best—would fail to inspire the modern man. On the contrary, the strict adherence to yoga requisites might even be regarded as operose, anachronic and even repulsive. The gulf had to be bridged somehow without sacrificing the inherent and essential merits of the physical, mental, moral and spiritual perspectives of Yoga, its precision of technique, and its way of life so blended as not to jar one's inhibited convictions or to upset his environments.

For the first time in the history of Yoga, with this formidable object in view, the author began his pioneer work of popularization and scientific reorientation and evaluation of yoga technique. Another noteworthy contribution made during this unique experiment was the removal of prejudice and misunderstanding regarding yoga practices—both physical and mental—through repeated attention to academic authentication from ancient texts besides scientific corroboration and practical demonstrations. This has certainly paved the way for healthy popularity by bringing home the message of the great practical value of Yoga to every householder.<sup>16</sup>

<sup>16</sup> For historical and factual data about the origin and progress of modern trends of Yoga, Cf *Yoga* Vols. I II III IV and V, and *About Yoga*, 1955 Edn.



## CHAPTER II

### PHYSICAL EDUCATION IN YOGA

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*What is Physical Education—Objectives of Physical Education—Right Health Perspectives—Yoga Health Ideals—Evolution of Postural Training—Scope of Yoga Physical Culture—Scientific Fundamentals.*

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#### WHAT IS PHYSICAL EDUCATION

PHYSICAL education may be regarded as a fundamental biologic urge for superiority and as such was the oldest mode of education, a form of training, even among the primitives. The first man who hurled a stone or climbed a tree to secure his prey initiated the archaic pattern of what has now come to be regarded as physical education. Because suchlike education was obviously carried out by and affected the physical, it was misconceived as having no relationship whatsoever with other aspects of life—the mental, moral and spiritual. The physical fitness acquired, however, through this fallacious pattern of education is, in fact, the only hypothetical feature of primitive life which is thought to be superior to that of modern man. But in the context of the wholeness of the individual rightly insisted and recognized by Yoga, any education of the physical is, to all intents and

purposes, the education of personality (*citta*) through the physical <sup>17</sup>

## OBJECTIVES OF PHYSICAL EDUCATION

In the primitive society, the factors of physical education were undoubtedly limited to the acquisition of physical fitness, strength, vigour, agility, skill, endurance and such other particularities, as subserved one's biologic instincts. For example, in matter of self preservation, the savage was violently interested in a strong body to aid his daily search of food, to protect him against the vagaries of Nature and the wild life around him, and to defeat his adversaries.

Progressively, this primal objective acquired an added significance among the ancient nations of the East and the West who applied the various factors of physical education to military, social, æsthetic, recreative and similar purposes. With the advance of civilization, organized physical education became a need and in the wake of social, political, medical and other changes it gave rise to the conscious and purposive system of physical education which it is today. But the first to correlate physical education with health, hygiene, therapy, ethics, meditation and higher purposes of life so as to associate such training with medical, social, mental, moral and psychic education were the ancient yogins of India <sup>18</sup>. That this conscious,

17 Cf *Yogasutra*, I 2 to be read with sutras II 29f

18 Cf *Yoga Studies*

## RIGHT HEALTH PERSPECTIVES

purposive, and organized system of physical education and its noble objectives permeated through the Chinese mainland as early as B.C. 2600 under the name of Cong Fu is a matter of cultural history.<sup>19</sup>

## RIGHT HEALTH PERSPECTIVES

That yoga physical education (*asana* and *pranāyama*) coöperated fully with health education in ancient India was not sufficiently recognized due to secrecy and its higher moral and spiritual objectives. In consequence, it would appear that, for those whose main interest in life is limited to good health, Yoga may have very little or no appeal. This presumption, however, is not true for the simple reason that the maintenance of good health (*arogya*) according to Yoga, is the primal sacred duty of every man.<sup>20</sup> And what is of special significance is that Yoga does not conceive man as having only a physical body but, on the contrary, it emphasizes the greater value of the mind and soul which characterizes his personality. It must therefore be constantly remembered that whenever Yoga refers to good health, it always includes besides the physical, the mental, moral and psychic health as well. Therefore, in dealing even with the primary perspective of physical education for good health, Yoga has consistently

19 Cf. *A Brief History of Physical Education* by E. A. Rice and J. L. Hutchinson p. 8

20 Cf. *Yoga Personal Hygiene* by Shri Yogendra pp. 35f

regarded man as the synthetic whole and not as the parts.

Based on this concept of the wholeness of man, the principles involved in the yoga physical education—a part of Haṭhayoga—become intricately correlated to a number of objectives leading to the ultimate as outlined in FIG. 1. This yoga outlook remains fully corroborated in all its aspects ; and the ancient philosophy and modern science have been veering around the yoga fundamentals by casual references and scientific corroborations respectively. This wisdom of the ancient yogins thus has to some extent been evident to the old philosophers and progressive scientists both in the East and the West. For example, Aristotle B.C. 350) observes that “The results of a good physical education are not limited to the body alone, but they extend even to the soul itself.”<sup>21</sup> Only Montaigne in the seventeenth century recognized the full import of the fact of organismic unity of man—the sum and substance of Haṭhayoga—when he passed on his watchword to the advocates of physical education that “It is not a soul, it is not a body that we are training up ; it is a *man*, and we must not divide him.”<sup>22</sup> In recent times, referring to physical education, Goldthwait states, “It should always be remembered that the human body is made with a physical body, a mind, and a spirit ; and the three parts are so dependent,

21 Cf. *Dialogues, Fragments*, 45

22 Cf. *The Education of Children*, by Michael De Montaigne.

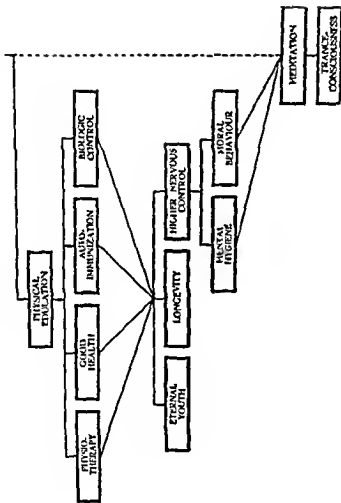


FIG. 1

each upon the other, that any influence on one must affect the whole"<sup>23</sup>

Haṭhayoga or the physiological Yoga (*ghaṭṭayā yoga*) is, in its entirety and essence, the subliminal process of physical culture of which physical education is one aspect. The principles of yoga physical education are founded on two sound factors, viz., *asana* or posture and *pranayama* or control of bioenergy through the respiratory system. Among its main objectives are (i) the removal of ill health (*rogacikitsa*), (ii), the requisition of positive and sedate good health (*arogya*), and (iii) auto-immunization (*svataḥśrīkarakṣamala*) leading to (iv) biologic control (*dehasiddhi*). These results of physical education as taught by Yoga contribute to (i) eternal youth (*cirayaurana*), (ii) longevity (*cirayu*), and (iii) higher nervous control (*nadī buddhi*). The higher nervous control in turn affects the mind through mental hygiene (*cittasiddhi*) and therefore the moral behaviour (*yogacara*). These cumulative subliminal endeavours by their own virtue and momentum help to attain the various stages of meditation (*śamya*) which finally culminate into trance-consciousness or *śamādhi*—the penultimate objective of Yoga.<sup>24</sup>

This, then, are the right physical education and health perspectives propounded by Yoga thousands of years ago—in the context of the wholeness of man—and it is most gratifying that modern

23 Cf *A Manual of Personal Hygiene* by American Authors, p. 365

24 Cf *Yoganitra* 1.3 to be read with IV, 31

## YOGA HEALTH IDEALS

science has in its own way accepted this scientific, wholesome and radical outlook towards good health and, therefore, towards physical education which endows it. In spite of this common objective, however, the means employed to achieve the end by Yoga and those employed by modern science differ in many details and are, at times, quite contradictory.

Unfortunately, not until 1918 have yoga physical education (*asanapranayama*) and physical culture (*hathayoga*) been thoroughly understood in their right perspectives as outlined above for want of authoritative and scientific knowledge because, in fact, what little was known to the public of their secret physical practices passed more for mere magic or mysticism than for science. Today, in the light of the researches conducted at The Yoga Institute for the past forty years, it has become possible now and here (i) to discredit the many vague misapprehensions about Yoga in general and, further, (ii) to evaluate scientifically the merits of yoga physical education in its relation to good health and other purposes. To any rational health seeker, therefore who values good health for its own sake—let alone the higher mental, moral, and psychic attainments—the yoga physical education bears special significance.

## YOGA HEALTH IDEALS

According to the psychological conditioning of an individual, good health may be regarded as

essential from more than one aspect. It is for this reason that one who is not drawn to the extramundane aspects of Yoga may still feel equally interested in knowing how Yoga views good health and why. As a matter of fact, the layman looks upon health from purely a practical point of view—that being just the way many have learnt to look upon everything in life from stone to God—as an invaluable asset which enhances the chances of his physical fitness and therefore of his mundane happiness and prosperity. The rationalist and the atheist strive for it because, in terms of physical good, health symbolizes the sum total of all their daily endeavours and the only obvious means to their worldly enjoyments. Medical men value health for health's sake for human life is rare and good health is still rarer. It will not be improper to go a step further and say that good health in its ideal sense, under modern conditions of unnatural living, is the rarest.

(a) *Broad Principles of Good Health*: To begin with, Yoga regards good health as the man's natural privilege. Accordingly, if one lives rightly, it is easier to be healthy than to be sick.<sup>25</sup> In the perpetual struggle for existence and the survival of the fittest, Yoga recognized that it always pays to be healthy, for this not only ensures biologic preservation but also provides for self-assertion, self-expression and self-realization—the very fundamentals for which an individual really lives.

25 Cf. *Yoga Personal Hygiene*, by Shri Yogendra, pp. 41, 42ff



Measured in terms of animal economy, the yogins soon found that the day-to-day good health is relatively cheaper while sickness is expensive. As a consequence, Yoga looked upon ill health as a vice because of the attendant suffering and distractions, and upon good health as a virtue because of its personal and social benefits. Irrespective, therefore, of one's station in life—whether a layman, a poet, a scientist, a philosopher or even a mystic—good health besides being wealth and blessing in itself, is a prerequisite for and an essential factor of success in the achievement of the various objectives of life.

That we of the modern world having a definite value for this physical body appreciate good health is neither unnatural nor unusual, but the fact that the ancient seers whose consideration to the earthly body was secondary and whose sole objective in life was to divine the Things Beyond should have equally emphasized the value of good health is certainly remarkable. Even this is not all, for what is relatively more important is the many aspects from which good health has been viewed by Yoga as being incumbent and evolutive.

The ancient yogins of India, the pioneers of physical education for health, have thus a message for the modern health seekers which offers the rational and definite purposes of good health and the most direct and effective means of acquiring it. Within the limited space and purpose of this concise and popular work, however, it is not possible to treat of

yoga physical culture in all its correlatives, hence, what it best could be done is to merely draw attention to some of its outstanding objectives, general cultural aspects, and scientific background

(b) *Physical Immunity resulting in Sound Health and Longevity* Man shares with the animal a physical nature—he has a body, the citadel of the mind and the temporary tenement of his soul. Yoga insists that it is imperative in the interest of human evolution—whether it be physical, mental, moral or spiritual—that this link in the endless chain which connects the generations past with the generations yet to come shall be made as healthy and strong as the environments, heredity and auto-inherited potentials (*samskaras*) will permit. Indeed, so infinitely varied are the physical capabilities that we inherit—for all of us inherit the elements of both weakness and strength that our ancestors have bequeathed us—that, unless conscious and purposive physical education is applied, the individual and therefore the race is likely to suffer from the consequences of gradual deterioration. Yoga emphasizes (i) that it is within our power to conserve and increase the health of our body and mind, and (ii) that it is also within our power to dissipate whatever physical and mental fortune we may have received.

It should also be made clear for the knowledge of those who know nothing or very little about Yoga—either as a culture or as a science—that in striking contrast to all other systems of philosophy,

both Indian and non-Indian, which discard physical health as an essential to spiritual experience, the system of Yoga has from its very inception set a definite value upon physical education.<sup>26</sup> According to Yājñavalkya, Svātmārāma, and other teachers of Yoga, no higher spiritual experiences are possible without the aid of good health. Gorakṣa, the great practical yogin, states "How can one hope to achieve success in life—let aside the ultimate objective of Yoga—when one does not know (the varied interrelations within) one's own body?"<sup>27</sup> That this ancient yoga maxim accords well with the principles of physical education and therefore with good health and longevity has been proved by the casual references to the past history and corroborative evidence of progressive sciences in relation to physical and health education in various countries.<sup>28</sup>

Moreover, yoga eugenism holds that physical inheritance could be considerably improved—nay, even be actually transformed—not only to personal advantage but also to the benefit of posterity. The acquisition of good health, therefore, first for physical immunity against disease resulting

26 It is historically incorrect for Le Maître to indulge in an acrimonious statement that "The physical body was not only ignored but even incredibly abused by the Hindus" and that "Indian belief and custom was the antithesis of physical education." Cf. *Physical Education*, p. 3.

27 Cf. *Gorakṣasamhitā* I, 14

28 Cf. *Physical Education and Healthful Living*, by F. J. Massey, pp. 3ff.

in sound health and longevity, becomes the most sacred duty of the yogin and also a daily hygienic necessity for him because, in terms of Yoga, even the slightest indisposition of the body *disqualifies* the individual from further progress in his higher yoga endeavours<sup>29</sup> Regarded from this point of view, the yoga assumption that, without the knowledge of the body and the health principles based on a sound system of physical education, no one is fitted either for life's responsibilities or—for that matter—Yoga, is at once highly realistic and scientifically precise

What needs emphasis in regard to yoga physical education is the fact that the objective of good health in the yoga sense is not the bestial urge for physical strength, bulging muscles and robust physique since brute force leads to violence, nor is it aggressive physical fitness as in the case of military and athletic spheres where such urge continually seeks fulfilment in adventure and victory What yoga physical education really aims at is physiologic soundness—pure radiant health conducive to immunity against disease and the promotion of longevity Such health, characteristically, is both sedative and positive

Why, in Yoga, the education and care of the body must primarily serve as a preventive against and immunity from disease is because physical indisposition and invalidism are regarded as a sin (*dehapaapa*)—a social appreciation which is now so

29 Cf *Yoga Personal Hygiene* by Sri Yogendra pp 33ff

very widely accepted by modern hygienists<sup>30</sup>—which obstruct mental, moral and spiritual progress in the rhythm of human evolution not only of one's own self but also of others who form the society

(c) *Asset to Mental Purity* Yoga holds that physical *cum* health education should affect the whole person and that the activities of *asana* and *pranayama* should be so conducted as to lead to self control, concentration and mental purity. Five thousand years ago before others became aware of it, Yoga affirmed that on the quality of physical education and health depends largely the power of concentration and the sanitation and purity of the mind. Although Juvenal grappled with the psychological concept of physical education by inspiring the adage "*mens sana in corpore sano*"—sound mind in sound body—it was really Yoga that first succeeded in devising a system of physical education solely with a view to developing and maintaining immaculate mental purity and control. The noted mental hygienist La Rue rightly asserts what the ancient yogins did five thousand years ago that "Health is wealth, but the very exuberance of bodily health may be a curse without proper mental control. All health that is not ultimately mental health is not health at all"<sup>31</sup>

It is wrong to suppose that thinking and other mental processes have nothing to do with the body. As a matter of fact, mental processes take place

30 Cf *A Manual of Personal Hygiene* by W. L. Pyle p. ix

31 Cf *Mental Hygiene* by D. W. La Rue p. 15

first through motor activity and are then communicated to the brain. Years of scientific experiments at last convinced Sir James Crichton-Browne of the truth so patent to the ancient yogins when they introduced physical education in Yoga and which still lies as the basis of modern physical education. It is that "the effects of physical training are not confined to the motor centres, but that they extend to the other portions of the brain as well, even to those portions which are especially related to mental processes." It is for this reason that Rousseau found it difficult to precisely demarcate between education of the mind and body. In Yoga, the activity and value of physical education does not cease with the body but extends to the mind.<sup>32</sup> Aristotle was right when he emphasized that "the education of the body must precede that of the intellect."

(d) *Aid to Moral Life* Add to this biologicum-psychologic fact, the recent findings of Georges Demeny, the celebrated French authority on applied psychology, that 'Apart from its effects on the mental powers, physical training has also its value to moral discipline,' and one has yet but only half understood the real scientific fundamentals, objectives and practical values of yoga physical education. It is no secret that, in some measure, through positive and sedate health of the body—continually kept free from all pathogenic conditions—higher Yoga seeks assistance for

<sup>32</sup> Cf. *Haṭhayogopraśādhikā* III, 78

habituation to moral life It is now widely accepted that "physical education should take into account the facts about habit formation in its effects to produce certain habituations" <sup>33</sup> In yoga physical education the primal motive is the habituation to the yoga way of life called *yogacara* Beecher, the pioneer of calisthanics, holds that physical education should be employed for moral education since each one of them was equal in importance to the intellectual In the absence of pathologic morbidity and the consequent abnormal physical urge, the high level of physical well being gradually leads to an appreciation of moral traits and also to actual moral behaviour This yoga truth still awaits full recognition by the modern scientists

(e) *Link up with Psychic Education* From ancient times and in all lands asceticism has been the highest ideal of spiritual life Religion interprets it as a subjugation of the flesh dipped in passions and worldly desires with a view to freeing the soul so that it may rise unhampered to great spiritual heights In such context, when uncleanness was next to Godliness, the followers of this path were often found infested with virulent bacilli and suffered from many diseases But Yoga which is equally interested in spiritual evolution not merely disclaimed uncleanness but made cleanliness (*saucha*) an obligatory requisite (*annga*) even before physical education is allowed to be practised <sup>34</sup>

33 Cf *The Principles of Physical Education* by J F Williams p 174

34 Cf *Yogasutra* II 3<sup>o</sup> to be read with II 40

culture. That this is no exaggeration is becoming more and more evident each day since even the modern scientists have, of late, bestirred themselves to emphasizing the need and value of correct posture as an aid to physical as well as mental well-being.<sup>40</sup>

The history of posture, however, may be traced even to an earlier period than that of *Patañjali*—for after all, he merely systematized what actually existed prior to him. It is, thus, evident that, whenever mental harmony and effort is desired, the need of a steady, comfortable and balanced pose has been invariably felt. Consequently, the value of posture as an external aid to the higher purposes of life must have been keenly felt and recognized by the ancient seers of India even before the Vedic period (B.C. 5000). This is obvious from the various references occurring in the Vedas, Brāhmanas, Āranyakas and the earlier Upanisads. As a common inference, the practices, undoubtedly, must be recognized as being much older than their textual references.<sup>41</sup>

The ancient yogins having had the time and patience necessary to investigate fully by personal experiments the varied influences of these postures on individuals further scrutinized their relative merits by analytical comparisons, and, thus, formulated, after years of research, a complete

40 Cf. *Physiological Psychology*, by C. T. Morgan, pp 316-322.

41 Cf *Yoga Studies*.



course of posture training best suited to the students of self-culture. Such few early postures—mostly meditative poses—in turn, passed through a series of modifications and additions before the whole system of yoga physical education was finally perfected by the early students of scientific Yoga, the *hathayogins*<sup>42</sup>

The evolutive scheme of *asana* synthetically includes, besides the original prayer and meditative poses, certain other postures as well which have been found to be definitely useful as cultural and therapeutic measures. To their static usefulness, the author has added considerably and successfully, a series of dynamic variations with a view to enlarging their scope of application and also to meeting the varied requirements of all classes of students. Their influences on many vital physiologic functions have been tested on thousands of students and patients for nearly four decades, and the short scheme for their daily practice herein propounded is strictly based upon the selective average need of the individual more interested in good health and longevity than in bulky muscular development and display.

#### SCOPE OF YOGA PHYSICAL CULTURE

It is, thus, evident that posture in the early stages represented only a very limited aspect of the yoga physical culture. As such, care of the body through postural education—of course, primarily

<sup>42</sup> Cf. *Ibid*

The very acceptance of physical culture by Yoga as an accessory to moral life, mental purity and psychic unfoldment reveals how sane and rational has been this outlook towards physical education. Rousseau's theory that a debilitated body enfeebles the soul is in conformity with the ancient yoga teachings and fundamentals. Massey is really quoting Yoga when he states that "The whole man should have a whole education. Deification of only the physical, or the moral, or the spiritual leads to disaster"<sup>35</sup> Yoga, however, scientifically and progressively, proposes to lead from physical soundness to moral behaviour and with the aid of both these to mental purity (*cittasuddhi*) culminating in spiritual realization.

Biologically, what is most significant is the fact that, after mental purity and control is gained and the utmost moral and spiritual progress is in view, should it become necessary for any student of Yoga to extend the period of this earthly life, he or she could do so through yoga physical culture by defying and getting beyond old age—and, it is said, even death—and thereby gaining the necessary time to complete one's course of psychic evolution during one's own lifetime<sup>36</sup>.

These, in fact, are the yoga health ideals in relation to physical education which are, to a more or less extent, characteristically diverse in

<sup>35</sup> Cf. *Physical Education and Healthful Living* by F. J. Massey  
p. 25

<sup>36</sup> Cf. *Yoga Personal Hygiene*, by Shri Yogendra, pp. 60f

## DEVELOPMENT OF POSTURAL TRAINING

their immediate and ultimate objectives from those advanced by other systems and by many physical educationalists. Having realized this vital diversity in the right perspectives and methods of approach to good health, it should now be easy to appreciate the very elaborate and perfect programme of yoga hygiene—including physical education taught by Yoga.

## DEVELOPMENT OF POSTURAL TRAINING

The first indication of body culture in Yoga is to be traced through the words *asana* (posture) and *pranayama* (the regulation, conservation and control of bioenergy)<sup>37</sup> In this work, since we deal directly with the former—in its dynamic aspect—we may discuss here briefly not only how posture training came to be regarded as a physical requisite for Yoga but also how its later developments aided the most comprehensive evolution of hygiene—physical training, hygiene, social medicine and therapeutics<sup>38</sup>

*Asana* has been defined by Patañjali (B C 200), the foremost exponent and compiler of the yoga system, as that bodily pose which not only conforms to steadiness (*sthira*) but which is also equally pleasant and comfortable (*sukham*)<sup>39</sup> It is recognized by Yoga as the primal requisite whether for physical, moral, mental or spiritual

37 Cf *Ibid* p 159 Gorakya quoted by *Jyotir* II, 71

38 Cf *Ibid* p 43ff

39 Cf *Yogasūtra* II 45

culture. That this is no exaggeration is becoming more and more evident each day since even the modern scientists have, of late, bestirred themselves to emphasizing the need and value of correct posture as an aid to physical as well as mental well-being.<sup>40</sup>

The history of posture, however, may be traced even to an earlier period than that of *Patañjali*—for after all, he merely systematized what actually existed prior to him. It is, thus, evident that, whenever mental harmony and effort is desired, the need of a steady, comfortable and balanced pose has been invariably felt. Consequently, the value of posture as an external aid to the higher purposes of life must have been keenly felt and recognized by the ancient seers of India even before the Vedic period (B.C. 5000). This is obvious from the various references occurring in the Vedas, Brāhmanas, Aranyakas and the earlier Upanisads. As a common inference, the practices, undoubtedly, must be recognized as being much older than their textual references.<sup>41</sup>

The ancient yogins having had the time and patience necessary to investigate fully by personal experiments the varied influences of these postures on individuals further scrutinized their relative merits by analytical comparisons, and, thus, formulated, after years of research, a complete

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course of posture training best suited to the students of self-culture. Such few early postures—mostly meditative poses—in turn, passed through a series of modifications and additions before the whole system of yoga physical education was finally perfected by the early students of scientific Yoga, the *haṭhayogins* <sup>42</sup>

The evolutive scheme of *āsana* synthetically includes, besides the original prayer and meditative poses, certain other postures as well which have been found to be definitely useful as cultural and therapeutic measures. To their static usefulness, the author has added considerably and successfully, a series of dynamic variations with a view to enlarging their scope of application and also to meeting the varied requirements of all classes of students. Their influences on many vital physiologic functions have been tested on thousands of students and patients for nearly four decades, and the short scheme for their daily practice herein propounded is strictly based upon the selective average need of the individual more interested in good health and longevity than in bulky muscular development and display.

#### SCOPE OF YOGA PHYSICAL CULTURE

It is, thus, evident that posture in the early stages represented only a very limited aspect of the yoga physical culture. As such, care of the body through postural education—of course, primarily

<sup>42</sup> Cf. *Ibid*

as an aid to meditation—had to be gradually augmented with a view to meeting individual requirements of all. Accordingly, Haṭhayoga found it necessary, in the interest of every class of students of Yoga, to evolve a complete scheme of knowledge, care, training and control of the external as well as the internal organs of the body, particularly for assuring *permanent* good health and, thus, for undisturbed meditation.<sup>43</sup>

Consequently, for every part of the body and for every important physiological organ within, Yoga had to devise methods of exercise, purification and control which are to keep the body in uniform good health both *within* and *without*. The emphasis, therefore, that if carefully applied the yoga physical culture is sure of contributing to lifelong good health and longevity, is significant.<sup>44</sup>

The practices, thus, effecting all parts of the body within and without—the teeth, the mouth, the tongue, the sinuses, the nose, the throat, the ears, the eyes, the lungs, the heart, the stomach, the intestines, the sex organs, the endocrine glands, the nervous system and such others—constitute, what may be rightly termed, the art and science of yoga health and hygiene. Its physical culture *inter alia* consists of the eighty four *asanas* (postures) with an equal number of possible dynamic variations, the three *bandhas* (muscular controls),

43 Cf. *Haṭhayogapradīpikā* with *Īyogas* I 17

44 Cf. *Yoga Personal Hygiene* pp 51ff.

## SCIENTIFIC FUNDAMENTALS

the twelve *mudras* (neuromuscular controls), the ten *mahāmudras* (ideonervimuscular processes), the *ṣaṣkarmas* (six internal purificatory measures), the eight distinct breathing exercises for the regulation, conservation and control of bioenergy (*prāṇayama*) and several other measures including personal and general hygiene, dietetics and preventive and therapeutic measures <sup>45</sup>

## SCIENTIFIC FUNDAMENTALS

It is, indeed, significant that not only does Yoga recognize the need for *health* before *strength* but it also pays greater attention to the internal health than to the external. The essentials of yoga physical culture are, therefore, worthy of study in the light of modern sciences, and may be summed up as follows —

1. To increase the health and strength of the internal organs proportionately with the increase in the external skeleton and muscular growth and body power. While this basic principle was realized by the ancient yogins thousands of years ago only recently has it been fortunately ascertained by the scientists that a number of prize-winners have underdeveloped lungs and heart capacity or inefficient internal organs which account for their premature death. It was not for nothing that ages ago the yogins pointed out the fact that

45 Cf. *Ibid* pp 6\* et seq

real health is the health of many and delicate internal organs. The advocates of yoga physical culture did wisely lay then, as do our modern scientists today, special emphasis on this vital issue of organic health.<sup>46</sup>

- 11 The chemistry of exercise requires that the composition of blood whose circulation is to be accelerated through physical movements should be of the highest purity if the body were to derive the maximum hygienic benefit. Where this is not so, the inner organs are likely to suffer due to the influx of toxins. Again, the elimination of carbon dioxide and the interchange of oxygen in the blood if not adjusted favourably, through incorporation of suitable respiratory balance, an exercise may prove even unhygienic.<sup>47</sup>

Being conscious of this need for cellular and blood purity, the yogins recommend that cleanliness (*suddhi*) should be both within and without. The yoga baths, therefore, are not limited only to the surface skin, e.g., sun-baths, steam-baths, air-baths, shower-baths and what not, but they also include the oxygenation and irrigation of

46 Compare *Introduction to Physical Education*, by J. R. Sharman, pp. 61ff.

47 Compare *Physiology of Muscular Exercise*, by E. C. Schneider, pp. 112.



the many vital organs within the body. There are, thus, special auto-processes in Yoga for the nasal cleansing (*neti*), the stomach washing (*dhouti*), and the thorough irrigations of the alimentary canal (*basti*), the small intestines, the bladder and even the sexual organs (*vajroli*), etc.<sup>48</sup>

Carrel has recently proved through successful laboratory experiments how much proper elimination of the toxins alone contributes not only to steady good health but also to longevity.

- iii. All the yoga exercises and processes characteristically aim at nervous control, purification and coordination rather than at muscular display and strength, and, as such, urge towards poise and control of the body and the mind, through non-violent and non-fatiguing type of physical education.

Pyle, Stewart, McKenzie and other authorities on physical training are able to advance only now a sound principle of nervous training through physical culture—a fact so plain to the ancient yogins like Yajñavalkya, Gorakṣa, Svātmaṛama and others. According to this, it is exceedingly probable—and this is one of the most important point in the physiology of

48 Cf. *Yoga Personal Hygiene* by Śhrī Yogendra

rational physical culture—that the increased use of a group of muscles in *various combinations*, especially in relation to the internal organs, leads to an increase in the *size and efficiency of the nerve cells* of the spinal cord and brain which are connected with them, as it is known to do in the case of the muscles themselves <sup>49</sup>

- iv The graduated course of neuromuscular training in Yoga includes also the scrupulous care of the whole body which means that every part of the body even to the smallest ductless gland receives proper attention daily. The object, most certainly, is to see not how much strain our strength can stand but how really great we can make that strength through prolonged good health

Physiology of exercise has revealed how neuromuscular education by the habitual exercise of effort-*cum*-endurance can bring about maximum of contractibility of the whole muscular system and, in consequence, raise the tone and enlarge the field of efficiency. When this simple truth is applied to the internal organs—as happens to be the case with yoga physical culture—it is no wonder that *physical efficiency becomes multiplied* and the height of biologic

<sup>49</sup> Cf. *Physical Education and Healthful Living* by F. J. Massey, p. 85

perfection is ultimately achieved. This would account for the enormous and otherwise inexplicable control, endurance and strength developed under a highly complex training and purification of the nerves where all the voluntary and major involuntary functions of the body are brought under direct control of the will. Such unique achievement in physical culture is possible through no other systems, as far as they are known today, except and only through the scientific technique of Yoga.<sup>50</sup>

Although superabundantly rich in the positive concept of scientific physical culture, the yoga postures and processes remained obscure and unhonoured for thousands of years first because of their antiquated association with metaphysics and religion, and secondly because of the traditionally imposed secrecy. In the case of the former, metaphysics and religion have prejudiced the due claims of Yoga, before those who are naturally disinclined to yield to its philosophic or religious advocacy. In the case of the latter, secrecy has deprived it of its just popularity. And, what is worse, both the above jointly created for and, around Yoga a traditional atmosphere of mysticism even at times, grossly misinterpreting its original import and, thus, jeopardizing its genuine scientific merits and social and practical values.<sup>51</sup>

50 Cf *Yoga Personal Hygiene*, pp. 57ff

51 Cf *Science of Yoga*, by Shri Yogendra, p. 47

Notwithstanding any and all misconceptions which may continue to exist in regard to Yoga, it should now become clear to the rationally-inclined seeking after good health through physical education that, for healthful living of an ideal type, no better system of physical culture has ever been investigated than the great science of the ancient yogins. The jargon of metaphysics and association of various religious traditions never disturbed its technique; the secrecy of ages about its practice has been lifted with the aid of science; and the various yoga processes are now available to the public—through the authorized and illustrated publications of this Institute—and may, with great benefit, be incorporated in the daily personal hygienic duties.

The series of rhythmic exercises for men forming a part of yoga physical education herein set forth is based upon the less complicated yoga postures and their dynamic variations. The necessity for such a dynamic system as shown in FIG. 2 arose from the realization that the apparent rigidity of the static poses, when applied to the untrained ordinary people, called for much discomfort, strain and endurance. Consequently, the disinclined and the sick, more often than not, dropped the very study of the yoga postures altogether. A graded physical training course that is to lightly lead the earnest to the successful practice of the yoga poses, thus, became imperative both in the interest of the individual as well as the masses.



STATIC CAKRĀSANA



DYNAMIC CAKRĀSANA  
(ANTERIOR)



DYNAMIC CAKRĀSANA  
(POSTERIOR)



STATIC PASCHIMOTTĀSANA



DYNAMIC PASCHIMOTTĀSANA  
(ANTERIOR)



DYNAMIC PASCHIMOTTĀSANA  
(POSTERIOR)

## PHYSICAL EDUCATION IN YOGA

What with the scientific technique—precision, rhythm, coordinated breathing and respiratory standstills, etc.—employed in formulating these dynamic variations, nothing much has been actually detracted from the special hygienic virtues of the original *asanas*. In some cases, however, such a course has even been suggested as an alternative consequent on the abstract descriptions in the Sanskrit texts which left enough margin for all possible variations. *Talasana*, *koṣasana*, *utkaṭasana*, and *cakrasana* are a few of the poses which offer many variants.

As such, alike the yoga postures themselves, their variations are primarily intended first to restore, then to maintain, and then to develop physical soundness by encouraging normal activities of the muscular, nervous and other systems conducive to a healthy condition of both the body and the mind. The aim is beneficent physiological and psychological affect of a scientific course of daily exercises and coordinated breathing rather than abnormal muscle building for orgastic physique associated with a brutish mind. In Yoga, there is no place for the latter.

Besides their antiquity—a c. 3000—symbolic of the most ancient system of physical education, they possess also many other virtues all their own. First, because of their essentially non violent and non fatiguing character, they are most suited to all, both the young and the old, as a safe system of physical training. Secondly, they have been

proved through laboratory tests to endow the maximum vital index when compared with other forms of gymnastics. Thirdly, they definitely maintain the natural organic harmony and proportion between the outer muscular development—really, the growth and elasticity—and the development and functioning of the vital organs within. Fourthly, they are known to contribute to *sedate* health—for that is what Yoga aims at and achieves—as against robust animality. Fifthly, each exercise has a specific *positive* health value both as a factor of immunity and as a preventive and a corrective measure.

And, to all the above advantages has been added as early as 1918, the unique rhythm of coördinated breathing, now popularly known as the Yogendra rhythm. Its scientific precision and physiologic harmony allow for the maximum benefit of respiration during physical exercise. It, thus, provides for the crest-load hygienic coördination between both the muscular and the respiratory movements.

The postures are carefully graded from easy to hard with a view to meeting both the individual and the mass requirements of the modern age, and are so arranged that each part of the body receives proper and sufficient exercise. The avoidance of strain has been kept in mind, and, in the beginning, for this reason, all the movements are to be practised lightly, always stopping short of actual fatigue. For, essentially, the affect of

properly regulated exercise should be to impart a sense of buoyancy and well-being rather than one of exhaustion and depression.

Of course, no system other than the advanced yoga physical education can claim a monopoly of the idea of fully exercising the muscular machinery of the body; and these dynamic yoga exercises for that reason are not meant to be regarded as comprehensive. They, however, represent the essentials of yoga physical education, besides serving as the preparatory course to the further study of the static yoga postures. Another objective in introducing them here is chiefly to show—both in the light of ancient wisdom and of modern researches—what must be envisaged as the correct and convenient method of non-violent physical education for the purpose of maintaining normal health of the body and the mind.

The cultural affects of these yoga physical exercises have been omitted on purpose in this work (i) because this manual is prepared strictly on a physiologic basis, (ii) because such higher influences are more subjective than objective, and (iii) because any addition of available data requires a top-heavy exposition to be scientifically intelligible. It has, therefore, been found preferable to discuss them in another work instead of specifically dotting each posture with hypothetic cultural values since inexact mystic flare and elegance quite often prejudices even the most simple issues of a positive science.



## SCIENTIFIC FUNDAMENTALS

For nearly forty years, these yoga exercises have been continually tested and worked out on both the students and the patients at The Yoga Institutes in India and America, and the affiliated centres, often under medical supervision—some of them having now been widely adopted by many sanitariums, health centres, Nature-cure clinics, and educational institutions in India and abroad—and have so far proved to be extremely satisfactory as a scientific course of *daily physical exercises for sedative and positive health.*

## CHAPTER III

### RATIONALE OF YOGA EXERCISES

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*Need for Physical Education—Essentials of an Ideal system—Systems of Physical Training Examined—Characteristics of Yoga Postural Exercises.*

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#### NEED FOR PHYSICAL EDUCATION

No matter how authorities may differ, the prevailing scientific opinion is—and rightly held by the yogins ages ago as such—that the body needs physical exercise sufficient in quantity and kind to keep it in good working order. "The development of the organic system of the body is accepted as a worthwhile objective because it seems to be true that one can live on a higher level and can do better many desirable, interesting and valuable things when the organic systems of the body are functioning smoothly. The idea of being healthy so that one can be of more service to mankind and can get more pleasure and satisfaction out of living is a worthy ideal."<sup>62</sup> To prove this settled fact, it is now no more necessary to indulge in much of the anatomical and physiological exposition or in the illustration of the skeleton, and the muscular, nervous and other systems.

<sup>62</sup> Cf. *Introduction to Physical Education*, by J. R. Sharman, pp. 61ff.

(a) *Cellular Health* Biologically speaking, to keep the body alive, it is quite enough to know that two things are necessary, viz, (i) nutrition and (ii) elimination. These essentials apply not only to the whole body, to the various parts of the body, and to the vital organs within but also equally to the very tiniest cells which compose them. That physical education rightly applied contributes enormously to the perfect harmony and efficiency of both these vital processes is now generally recognized because it increases the capacity of the heart to pump blood.

Given all other conditions equal, an under developed or a weak body may be regarded more a penalty for lack of physical exercise than anything else. For not only does the body demand attention in the years of growth but it also requires continuous care throughout the entire life, if perfect good health were to be enjoyed. Thus, no matter what other means one may adopt for care of the body—sanitation, dietetics, preventive methods and the use of drugs, etc.—so long as the tiniest cells are allowed to remain more or less static, the process of nutrition and elimination is sure to fail somewhere sooner or later. 'The human body is a muscular organism where its many systems are so completely united that every part is at once a means and an end to others. Any weakness in one part may disturb or even destroy the functioning of the other parts. All the parts maintain their level of efficiency by use and lose

their function by disuse."<sup>53</sup> Having regard to this biologic fundamental, it should become clear as daylight to any health seeker that the temporary adjustments often manœuvred through the objective and artificial aid of drugs and similar therapeutic measures could, in no sense, replace the very need for neuromuscular activity for good health which is constitutionally indicated.

What is at fault, perhaps, is a certain laziness to exercises of effort which is both so common and inherent in most people and which tempts to the use of a pill or a draught to adjust or to increase certain physiological functions where normal muscular activity could have achieved the same result with greater permanent benefit to the system. Moreover, the pernicious influence of indoor life and inactivity on growth and good health has been proved, and the need for daily physical exercise is being widely recognized by all.

(b) *Health Vs. Strength*: It has been a common belief, possibly imbibed through many ill-conceived notions of acrobatism and athletics which employed rigorous gymnastics for display and military exigencies, that the need for physical exercise is confined to the building of a strong body only. Worse still, much has been added progressively to this false evaluation by the pseudoscientific advocates of non-yogic systems of physical culture,

<sup>53</sup> Cf. *Physical Education and Healthful Living*, by F. J. Mancey, p. 103.

## NEED FOR PHYSICAL EDUCATION

of strength, of sports, of games and even of beauty, seeking to achieve their respective objectives through the development of strong bulging muscles. Consequently, except in the case of Yoga, until recently no great importance seems to have been attached to the acquisition of pure good health through systematic physical education.

At most, modern physical culture may yet be regarded as more a scheme of muscle and body training rather than one of exclusive neuromuscular education for simultaneous development, harmony and health of the internal organs. It is, however, wrong to suppose that strength necessarily imparts health. For it is significant to note, in this respect, that many of the acrobats, athletes and wrestlers, both in the East and the West, often suffer from acute or chronic diseases of many kinds. Fortunately for the future generations, the old misguided notions are yielding place to new scientific evaluations. Dio Lewis, the homopathist denounced the mania for monstrous muscles and chest which he believes misled the real purpose of physical education. Massey has gone so far enough to state that "Socrates with a headache is always preferable to a brainless Hercules. The cult of muscle is merely another view of the narrowness that fostered the cult of mind or the cult of the spirit."

Consequently, good health is now given priority over strength in the selection of physical exercise—a fact which even the most conservative medical

authorities quite freely admit as the essential objective of exercise. The aim of daily physical exercises should therefore be not so much to acquire a strong body as to acquire a *healthy* body, for it is really the health of an individual that counts in the enjoyment and prolongation of human life.

(c) *Neuromuscular Education* Yoga realized this and more, when ages ago, it insisted on the necessity of daily physical education for internal purification (*malasuddhi*)—virtually for the health of the nervous system and, therefore, of the mind. The acquisition of such good health becomes even more imperative in view of the basic yoga objective of concentration for the health of the subconscious, ultimately leading to the highest spiritual altitude.

Only now are our scientists able to appreciate a little of the many teachings of physical education as propounded by Yoga. For example, McKenzie admits that, The recognition of physical education has been retarded by dabblers and self-elected professors of one or other systems, whose extravagant claims have done much to obscure the real educational value of *neuromuscular training*, for the result of physiological research in the growth and development of *the nervous system* is just beginning to be applied in the classification and design of exercise, to harmonize it with the conclusions of proved science. Exercise has so many points of contact with education, it is so intricately related to *mental, moral and social training* each of which alone is so partial and incomplete

that the progressive educationalist is now *compelled to study its bearing on all three.*<sup>54</sup> And the fourth, which unfortunately is still omitted by our scientists, is the psychic bearing on which Yoga has laid so much emphasis.<sup>55</sup>

(d) *Physiology of Exercise*: Physiology has abundantly proved the need for exercise since the increase in the flow of blood throughout the body, and especially through the lungs, during the period of exercising, permits more oxygen to be taken into the blood and more carbon dioxide to be excreted, and both these biologic circumstances are definitely favourable to the general health, rhythm and activity of the body.

Besides these general effects of exercise on the circulatory and respiratory systems, it has also been found that the only natural way to retain the tone and elasticity of the muscular system is to cause alternate stretching and contraction of the muscles in such a manner as to provide for higher anabolic ratio while accelerating the interchange of products between the blood and the muscles.

Moreover, the need for exercise exists as much for outer as for inner health—especially to sustain and, if necessary, to heighten the normal functions of the digestive, urinary and excretory systems. This is essential to proper elimination since on the

54 Cf *Exercise in Education and Medicine*, by R. T. McKenzie, p. 9

55 Cf *Yogasutrasam*, p. 87

immediate and thorough disposal of the waste depends largely the health of the body. Interdependently, in the absence of normal elimination of the waste from the body, while the process of assimilation continues, it is always less effective and more difficult. Corrective exercises can, in a great measure, help to maintain the natural harmony between these two processes.

(e) *Physical and Mental Health* Muscular exercise, however, does not end with nutrition and elimination for, intrinsically, it has also a direct bearing upon the nervous system. So, what in ordinary speech we term as muscular agility is but the outer expression of *nervous agility*—a readiness of reception of incoming impressions and a promptness of discharge of efferent impulses on the part of certain individual nerve cells and groups of nerve cells extensively connected with each other and drilled to act in concord.<sup>56</sup>

As the matter stands, it is not yet sufficiently appreciated (i) that physical exercises—or, for that matter, even the simplest actions in life—are as much nervous as muscular, and (ii) that through them the brain and the nervous systems are educated and developed as well as the muscles. Yoga made a special study of these interactions and found that, since a person is a biomenal unit, his bodily and mental health are one so long as

56 Cf. *Patho-physiology of the Higher Nervous Activity* by I. P. Pavlov pp. 212f.



he dwells in the flesh, and—for all practical purposes—these two must never be considered separately<sup>57</sup>

(f) *Moral Health* Besides these vital considerations, physical exercise, if scientifically applied, is capable of influencing the endocrine glands just as it does the muscles, the digestive organs, and the respiratory, circulatory and nervous systems. Accordingly, the claim of Yoga that even behaviour, character and personality of an individual could either be completely transformed or be adjusted to harmonize with social life and moral ideals is not far from scientific truth.

'No one can be philanthropic with jaundice' says Crile, "and no one suffering from Graves' disease can be generous." This because of the simple fact that not only does the chemistry of the body change the chemistry of the brain, and so our feelings, and ideals but these affects and ideas change even the psychic life of an individual. Thus, as Yoga rightly believed 5000 years ago, the influence of physical education by transcending the mere body becomes extensive and immanent.

(g) *Preventive and Therapeutic Agent* And last but not the least important of all is the preventive and therapeutic value of physical exercise. The Hathayoga concept of *asana* that a systematic course of selected physical movements not only works as an immunity and a preventive against disease but, at the same time, acts also as a curative

57 *Prapamano d'ayam Cf Hathayogapradipika with Jyotirna*, IV, 15

agent is now generally admitted and applied as physiotherapy by all leading medical authorities. According to Pyle, "Physical exercises have been found of value in certain forms of dyspepsia, habitual constipation, gout, derangements of the function of the liver without any organic disease, obesity, neuralgia (including sciatica), nervous prostration, some forms of paralysis—especially the acute paralysis of children, locomotor ataxia, St. Vitus' dance, writers' cramp, muscular rheumatism, some forms of dropsy, certain diseases of the heart and blood vessels, lateral curvature of the spine, and sprains."<sup>58</sup>

Over and above this, it may be further pointed out that the clinical data compiled at the Institute conclusively prove how successfully could the yoga exercises be applied, both as a preventive and therapeutic agent, for many respiratory diseases (such as asthma, bronchitis, and whooping cough, etc.) and other functional ailments of the heart (such as high and low blood pressures, palpitation, cardiasis and extra interpolated systoles, etc.), besides acidity, anemia, diabetes, debility, obesity and many similar ailments.<sup>59</sup>

Evidently, through the synergic influence on the balanced growth protected by the necessary constitutional, corrective, and preventive measures,

<sup>58</sup> Cf. *A Manual of Personal Hygiene* by W. L. Pyle p. 339

<sup>59</sup> Cf. *About Yoga* prospectus of The Yoga Institute 1953  
Edn., pp. 18ff

the yoga postural exercises quite naturally help to avoid disease—an assurance of positive health—and, thus, to maintain such prolonged physiological harmony in the human body as cannot but contribute to longevity, the vital biologic aim in all physical considerations. This corrective phase of yoga physical education has recently heightened its application and importance in all modern countries.

## ESSENTIALS OF AN IDEAL SYSTEM

Having recognized the fact that good health is an inestimable blessing for more reasons than one and, further, that some system of daily physical exercises is necessary to sustain such good health, the important question that remains to be determined is which system of exercises is the best and why?

For one thing any system of physical education which proposes to promote good health should be primarily capable of causing requisite natural adjustment between existing functional irregularities through its own inherent corrective virtue for an overall improvement to retrieve health. The chief emphasis in physical Yoga (Hathayoga) therefore is—as in the case of modern osteopathy—on the structural integrity of the body mechanism which is regarded as one of the important factors of maintaining the well being of the organism in health and disease.

For another, it should be such as to contribute, in precise physiological proportion, to the external

and internal growth and education of all organs—harmony through coordination of their various functions being its chief aim. What is even more important is that such a course must ensure the maximum hygienic result with the minimum expenditure of effort. This for the reason that, at present, since many regard physical labour as a disgrace, unless endured for amusement, it is extremely needful that any systematic course of exercise undertaken to promote normal good health of the body should afford proportionately greater endurance with the least exercise of effort.

As such, its complements should affect all systems in the human body with a view more to enduring health than strength—ulterior motives, abnormality and display being entirely out of consideration.

For longevity, it should be able to keep the vital index constantly high through incorporation of such respiratory rhythm with each movement as permits of mechanical harmony, excess metabolism, and as high a state of physical efficiency as possible by exercises of endurance and habituation to the increased crest load. Also the heart trained to overload work, as in the case of yoga exercises of endurance (static) adjusts comfortably at lower loads <sup>60</sup>

Besides simplicity in technique, it should be self-sufficient, easy of practice, non-violent non-fatiguing, requiring little time and no accessories

60 Cf *Physiology of Muscular Exercise* by E. C. Schneider p. 119

## SYSTEMS OF PHYSICAL TRAINING EXAMINED

so that, on the whole, both the young and the old could follow it without any misapprehension

And lastly, apart from its purely physiologic influences, it should take into account also its finer reactions on the other planes of life so as gradually to promote moral and mental soundness through control of emotions and mental distractions by eliminating all that is likely to encourage disharmony in feelings and thoughts. For disharmony in any planes of life or stages of consciousness leads finally to ill health.

## SYSTEMS OF PHYSICAL TRAINING EXAMINED

Of the active and passive types of physical exercise—for all movements could be either active or passive—we are concerned, for our present purpose, only with those that fall within the category of active exercise. They are (i) the various systems of vigorous gymnastics—national military and otherwise, (ii) athletics games and acrobaticism with or without apparatus (iii) indoor and outdoor sports, (iv) mass drills, (v) calisthenics, and (vi) individual systems of home exercises.

To prove the superior merits of the yoga physical exercises, it is not necessary to disparage the other systems except to show where and how they fail to meet the requirements of an ideal scheme of good health and longevity in terms of impersonal logic and science which cannot be ignored by man however ignorant or learned he may be. Many exercise because they want to be strong, a

few exercise because they want to be healthy, while others do so because they want to be more efficient in their own vocations. Some believe it is unnecessary to exercise, some even regard it as causing sudden death, while others hold that it can prolong life indefinitely. Some have faith in a particular system, others swear by games while many adopt a system suited to themselves.

In the first place, most of these systems of physical training primarily owe their popularity to some ulterior motive other than that of good health—mostly spirit of nationalism, sometimes love of display and, more often than not, pleasure quest. In the second place, their entire spirit is either aggressive or militant with the result that their object of perfect physique quite naturally ends, as it must, in the enlargement of animality.

(a) *Vigorous Gymnastics* Almost all Indian and non-Indian major systems of physical education received their impetus from a sense of patriotism. Danda-baithaka, Guts-Muts, Sokol, Pentathlon and the Greek, Roman, Danish, German, Swedish, French and Japanese gymnastics, besides many other minor systems evolved by various countries, are mainly concerned with strength and, therefore, with the external muscular development without any or much regard to the internal harmony, growth and finer reactions on all other planes of life.

Because of their higher catabolic ratio when compared to actual physiological reactions during

the practice, they preclude longevity (Fisher), by successively decreasing the vital index. Generally, they are not expected to have any corrective value and, because of much strain and endurance involved, are, in the main, quite unsafe for those in poor health. As such, for brief daily exercises, they are quite unsuited to persons of all ages. Their characteristic aim is bodily perfection, vigorous physique and militant spirit.

As to their psychosomatic affects they create a preferential tendency for strength, thus, minimizing the basic objective of good health, besides exposing the individual to the susceptibilities of mass psychology and adding to his orgastic boisterousness. Their recreative value never reaches the height of relaxation, and their social objective—so widely advertised—actually decentralizes the mind.

While the Governments of various countries exhort and patronize such systems of physical education under the guise of public health, it is to all intents and purposes more for meeting their own militant needs rather than for eliminating animality in man or for purely sedate health. Unfortunately for humanity notwithstanding many independent scientific expositions discounting such systems of gymnastics as a health measure, this secret and cunning objective still continues to be indirectly but heavily underlined by the official committees set up by the Governments in various countries. Thus, in spite of solid scientific opinion against such systems of physical training, the

popularity they enjoy can be explained quite simply by the direct or indirect encouragement they receive from the powers that be <sup>61</sup>

(b) *Athletics, Games and Acrobaticism* All the methods of physical training belonging to these categories are known to involve a considerable amount of strain and even violence. Their vigorous and war like display is intrinsically unsuited to positive health. Further, they are likely to lead to abnormality through specialization in set muscular movements and higher nervous coördination. Besides the need for apparatus, they require also an arduous drilling.

Of late, there is a growing controversy in which medical men, gymnasts, sportsmen, sociopolitical leaders, university professors and many others are taking a very active part trying to prove or disprove the relative merits or demerits of one system or game against the other. The fact, however, remains acknowledged that whether for growth, health or longevity, athletics, games and acrobaticism are inaccurate and wasteful of time (McKenzie)

All forms of physical education requiring competition are regarded by the astute psychologists as very undesirable inasmuch as they lead to great physical and mental strain (Winslow). Whatever

<sup>61</sup> This jungle cry is still kept alive in the modern world as physical education. Physical education like all vital agencies of national life should be ready to serve the nation during war Cf *Principles of Physical Education* by J. F. Williams p. 50



encourages competitive spirit is *not* healthy for competition in its turn leads to excess. Such systems are bound to breed rivalry, and its attendant mental afflictions overshadow much of their vaunted social virtues. State support to Olympics being more a natural corollary to the political game—the display of the quality of every nation's military man-power potential—rather than a problem of every citizen's good health, the fact of their spasmodic popularity and international character hardly deserves to be used as a scientific proof in favour of these systems.

(c) *Sports* The sociopsychologic benefits of sports have to be carefully weighed against time value. Though, as active measures of social contact and recreation, they seem to afford the best of opportunity both to the body and the mind, they are certainly not the ideal means for the all round physical development and efficiency which accrue only through daily systematic exercises. Moreover, because of their economic involvement and sporadic nature, they cannot be adopted conveniently to the daily life of every person in such a precise measure as is essential to the maintenance of the day to day good health. Since every sport is circumscribed by the age limit and by the specified reactions in a fixed direction, their availability is determined by many factors including leisure and plenty. It is not denied that competitive urge and, therefore, strain are a common feature of all sports.

(d) *Mass Drills* Most drills by their force of regimentation and uniform measured timings preclude personal considerations, capabilities and need. It is for this reason that the educationalists regard public schools as representing a low standard, private schools because of their more individual attention is on a higher level, while the small private school or tutor affording the greatest amount of individual attention is the highest standard of instruction. What is true of other education is equally true of physical education in which mass drills are not the best.

By chronic usage, they tend to create submission psychology and automatism both of which are highly derogatory to subjective initiative and harmony. Full and free growth of an individual in any mass movement is self contradictory, and should be scrupulously avoided by one who aspires to finer and higher achievements in life through perfect harmony with oneself. Life would be a poor affair if we are to be moulded into a mass, filling a standardized gap to fit in it mechanically. Both on the physical and more on the other higher levels, we thereby miss much of that enjoyment in life which exercising our faculties and initiative to the full brings with it.

From the higher health perspective, it would, therefore, appear that the above systems are neither necessary nor the best. A very large number of students following the above media of physical education both in the East and the West, more

often than not, inherit the bestial strength complex which cannot but biologically involve self-aggrandizement limited not only to physical actions but extending even to emotions and thoughts. At the bottom of all aggressive outbursts in this world lie chiefly the ribald influences of bestial physical training which succeed in changing the chemistry of the brain (Smolensky) to suit their own unworthy purposes.

(e) *Calisthenics* While many forms of light gymnastics for health and beauty are far better than no physical education, their physiological reactions happen to be so insignificant as to preclude their exclusive use as exercise of endurance for vital development of the internal organs. What is desired of physical training is not merely grace, ease and rhythm but a maximum contribution to the external and internal growth of the human body hardened to all possible interactions in health as well as in disease. Such training requires calculated movements of the body capable of maximum internal reactions which light and playful movements of calisthenics fail to provide fully. As the supplemental indulgences they are good because of their agreeable and æsthetic nature, but as the only daily course of physical education, they are insufficient.

(f) *Home Exercises* There is much claptrap charlatanry and pseudoscience surrounding the subject of home exercises and the so called physical culture recommended by many qualified and

## RATIONALE OF YOGA EXERCISES

unqualified students of this subject. Accordingly, we are offered Delsarte's System of Expression, Kleen's Medical Gymnastics, Sandow's Body building Exercises, Muller's My System, Macfadden's Physical Culture, Gulick's Exercises for the Busy Man, Camp's Daily Dozen and scores of short courses of home exercises without apparatus for the average person of mature age.

Unauthorized yoga postural training likewise is also to a large extent subject to fads and whims as is amply demonstrated by the periodic popularity of new illustrated charts, books and courses widely advertised in newspapers, on radio, and by every available means of publicity. The unscientific and questionable approach in which the free lance and plagiarist have indulged when dealing with the practical technique of Yoga has not only invited censure from the intelligentsia but the courses themselves have, in fact, done more harm than good.

Most of these and such others presuppose a sound constitution and further involve repeated muscular movements directed more to the skeleton muscles than to the organic harmony for accommodation to varying physiologic reactions with the minimum waste of energy and wear and tear of the tissues. There is really no mystery about these exercises beyond their health value which is incidentally far better because of their systematic and all round character than the erratic modes of physical education previously discussed. The many "marvellous" systems of home and yoga

## SYSTEMS OF PHYSICAL TRAINING EXAMINED

exercises, thus, really owe such merit as they possess chiefly to the arterial hyperemia, the muscular movements they require, the arousing the individual to activity, and often there is some sort of psychic affect as in all cases where hope of special benefit is held out to the seeker after health

They aim to stretch the body, to exercise the thorax and to enlarge the lungs, to increase the circulation of blood, and to cause abdominal and pelvic movements. The movements when too often repeated, however, cause much waste especially of the muscular tissues, while their hygienic effects through physiologic interactions remain limited and being of too short a duration fail to produce such profound organic reactions as are essential or favourable to the health of the internal organs

Moreover, while there is evident harmony in the physical movements involved there is lack of that poise and endurance characteristic of physical fixation. Besides, the effort for oft repeated movements naturally calls for increased nervous agitation involving the cortex which, in turn, cannot fail to affect the mind similarly.<sup>62</sup>

### CHARACTERISTICS OF YOGA EXERCISES

In striking contrast to all these, the yoga posture exercises stand out in bold relief significantly because they truly comply with scientific precision all the

<sup>62</sup> Cf. *The Patho-physiology of the Higher Nervous Activity* by I. P. Pavlov pp 148f

essentials of an ideal scheme of daily physical education for the health and development of the organic systems. Among the many diverse characteristics of Yoga and non-Yoga physical education as shown in Fig. 3—the one leading to sublimation and the other to animality—the following may be briefly mentioned :—

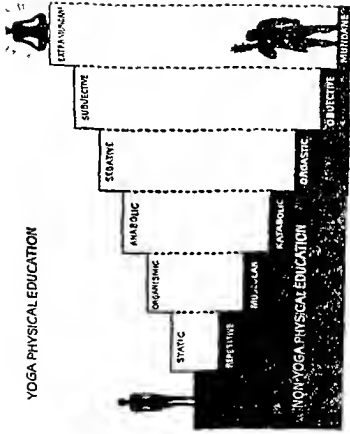
(a) *Corrective Value*: Since not all are ideally healthy, the possibility of an existence of some form of minor functional disorder in most people is taken for granted by Yoga.<sup>63</sup> Consequently, the removal of such probable ailments becomes the first concern of scientific Yoga, and the corrective postures, therefore, constitute a part of the main scheme of yoga postural training.<sup>64</sup> Fortunately, with a view to facilitating their application, the inherent corrective virtues of certain postures towards an overall improvement to retrieve health have accordingly and tentatively been discussed by the Hathayoga authorities when introducing them.<sup>65</sup> This gives clue to an intelligent evaluation of such specific postures and establishes once again the first essential of health, namely, the elimination of any physiologic irregularities or pathological

63 "The normal human being is not necessarily physically perfect" Cf *Physical Education*, by Le Maistre, p 26

64 The corrective value of physical education is now fully emphasized by all leading authorities and applied as an essential agent in physiotherapy

65 The description of most āsanās in all Hathayoga texts contain also their corrective value Cf *Yogayajñavalkyam*, *Hathayogapradīpikā*, *Gorakṣasamhitā*, *Gheraṇḍasamhitā* and others.

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conditions which may hinder good health. The clinical data at the Institute—some available in the works already published—pay a glowing tribute to the corrective virtues of the yoga exercises.

(b) *Minimum Effort for Maximum Result* The next objective, after the natural harmony between the various functions of the body has been re-established as above, is the progressive enhancement of physical well-being. This includes both the external and internal growth and coordination of all the organs. That the yoga posture exercises represent simply the perfect economy of means to an end is quite demonstrable. For such physiological reactions as might otherwise involve strenuous exertion and waste of tissues—as in the case of weight lifting, climbing, running and other vigorous exercising, etc. where a certain given rise in blood pressures, pulse rate, respiration and pulse pressure is achieved—are easily availed in a similar degree without exertion and waste of tissues through the specific yoga postures. This fact has already been established by the author with the aid of laboratory graphs published in the standard works on Yoga. The graph on *pascimottanasana* Fig. 20 is self-explanatory.

There is also convincing evidence that exercises of endurance are preferable to exercises of effort and what are recently introduced as resistive exercises. "In exercises of effort there is no time for the scavengers to work, fatigue of the most active muscles setting in rapidly, while in exercises of endurance they can,



at least, postpone its onset'<sup>66</sup> In the so-called resistive exercises, the active and antagonistic muscle groups are held in a state of stiff, awkward and rigid state of contraction which is unphysiological All yoga postural exercises are exercises of endurance where each movement is within one's own power and while the muscular tension is great, the contraction and relaxation processes of reciprocal innervation are comparatively harmonious, slow and organically vital

Similarly by the elimination of quick and oft repeated contractions and relaxations of the muscles which is the fundamental difference between the various systems of exercise and the static yoga postures, the expenditure of muscular energy for any standard physiologic advantage is considerably economized This is made possible in various ways, e.g., (i) with the mechanical aid of gravitation (ii) by the diversion of the blood supply through adjustable pressures and (iii) by causing variations in vasomotoricity through an enduring muscular contraction and other suitable methods Not to speak of other systems of physical training even the various home exercises other than Yoga cannot, in a like manner achieve profound physiologic reactions with the minimum expenditure of energy

(c) *Maintenance of Favourable Vital Index* Another important physical consideration in exercise is the

<sup>66</sup> Cf. *Exercise in Education and Medicine* by R. T. McKenzie, p. 22f

problem of vital index. Scientific investigations reveal that exercises which involve decrease in the vital index are a definite menace both to good health and longevity. In the interest of both these, therefore, it is imperative that due preference is given only to that form of physical exercise which maintains a relatively higher vital index. This means that the respiratory act must be ideally coordinated with every movement of the muscles, during the period of physical training. When this is done, such training not only offers the mechanical advantage of physical movements in respect of the muscles but also incorporates with it the healthful effects of deep breathing—an increase in the supply of oxygen through adaptability to the crest load phenomenon of habituation.

(d) *Yogendra Rhythm* To the traditional and dynamic postural exercises, the author, thus for the first time in 1918, supplemented a highly scientific rhythm of breathing now known as the Yogendra rhythm. Its secret lies in that peculiar organismic harmony which endows each exercise with its own contribution to the maximum vital index. Clinical and laboratory evidence of nearly four decades conclusively indicates that the proportionate rise in breathing capacity to body weight during yoga exercises with the Yogendra rhythm is sometimes as high as 128 per cent and is never lower than 51.5 per cent<sup>67</sup>. Further, it has been observed that the Yogendra rhythm provides for

67 Cf. *Annual Reports of The Yoga Institute*

greater benefit, harmony and ease than what is possible through the specific yoga breathing methods when performed alone as commended by the authorities. This is so because while the former is aided by suitable mechanical adjustments of the respiratory muscles and by a steady rate of metabolism, the latter being static involves much exercise of effort for the essential accommodation to counter excess oxygenation affecting higher nervous activities and psychic phenomena.<sup>68</sup> The affects of prāṇayāma are thus graded through Yogendra rhythm.

Medically evaluating the advantages of deep and rhythmic breathing alone, Drs Fisher and Fisk of the Life Extension Institute of America observe that, "Every day deep breathing exercises should be employed. A hundred deep breaths a day is one physician's recipe for avoiding tuberculosis. A Russian author, who suffered a nervous breakdown, found—after trying many other aids to health without success—that a retired life for several months in the mountains in which simple deep-breathing exercises practised systematically every day formed the central theme, effected a permanent cure. Deep breathing is a great resource for people who are shut in most of the day. If they will seize the chance, whenever it offers, to take a dozen deep breaths, they can partly compensate for the evils of indoor living."<sup>69</sup> That this is chiefly due to an increase in the respiratory

68 Cf *Gheraṇḍasāhita* V, 68ff

69 Cf *How to Live* by Fisher and Fisk, p. 25

## RATIONALE OF YOGA EXERCISES

capacity favourable to the vital index is at once evident

Although the different courses of home exercises, from the standpoint of muscular movements, are often more or less rhythmic and well selected, there is a sad drawback in the harmony of their breathing movements. Of late, while many authors of home and yoga exercises have adopted and plagiarized the general principles of Yogendra rhythm without authority, they have, however, failed to be sufficiently specific in guiding the various stages of the movement. From the broad survey of home exercises so far made by us, it appears that as yet no single system of home exercises has succeeded in scientifically harmonizing the rhythm of breath with every movement of the body, and, what is more, there are no static intervals to encourage respiratory standstills and the hygienic benefits of fixation. In the slow-*cum* static dynamic yoga exercises, thanks to Yogendra rhythm, there is this ideal combination of what are variously the hygienic virtues of physical education.

In fairness to certain systems, however, it may be admitted that a few courses of home exercises contain also a separate series of exercises known as the 'breathing exercises' in which special attention seems to have been directed to the respiratory movements alone. But, as pointed out by Howard, "The building and renewing effects of oxygen can reach *only those parts made ready for them*. If there is any part of the body that is not

constantly ready, no methods of breathing exercises can possibly affect it."<sup>70</sup> One can go on expanding his chest and taking in deep breaths, yet he will find at the end that there are certain parts of his body still remaining inactive and undernourished. What is physiologically indicated, however, to achieve the above objective is either specified breathing with exercise or specified exercise with breathing. For this, the incorporation of Yogendra rhythm of breathing with all forms of home exercises is the only corrective.

The advantages of this combination are many and obvious. In the first place, it gives the same benefit as the ordinary physical exercises may give while, at the same time, enhancing the efficacy of deep breathing exercises taken separately. It is a matter of scientific experience that, physical exercises when practised by themselves, without any regard to the rhythm and accommodation of breath, do not yield as much hygienic advantage as when they are taken with proper breathing. Nor do the so called breathing exercises offer the same benefit that they would if followed without the harmonious movements of the body. Unity and harmony between these two physiologic factors is what must be always desired in any muscular exercise.

Most medical authorities are unanimous in their opinion that physical exercises for good health are

70 Cf *Breathe and be Well* by W. L. Howard, p. 39.

not important so much for their muscular activity as they are for the large quantity of oxygen that is absorbed by the system during such exercise. Take away the benefit of the steady rate of metabolism established under crest load during the period of exercise and there are only the mechanical movements left. These movements by themselves have very little health value—not even the advantage of a proper muscular development. To test this, let a man take exercise in a closed room where he does not get sufficient oxygen, and you will soon notice that it does him more harm in pursuing the exercise than in not doing it altogether.

In this connection, it must also be remembered that each movement of the body has its own rhythm of breath, and if this particular rhythm is not applied during that exercise, half the good of such a movement is lost owing to the resulting discordant respiratory response. So the special feature and importance of the yoga home exercises and their dynamic variations lie not only in their peculiar combinations and varieties of physical movements but also in the adjustments and choice of the very precise scientific rhythm of breath and respiratory standstills that naturally belong to every movement of the body.

For example, one cannot possibly keep on inhaling while bending down for touching the toes as in the case of posterior *cakrasana*. Why? Because it is a wrong rhythm of breathing for that particular

movement of the body. The scientific way to do it is to exhale, the very moment one begins to bend down. And, if this is not done either through ignorance or misguidance, the consequence will be that the internal organs—especially the lungs, the diaphragm, and the abdominal and pelvic viscera—will be effected adversely.

It is just this very difference that makes this new rhythm a special innovation as an all essential supplementary feature suited not only to the home exercises but also to the practice of the yoga postures and their dynamic variations as evolved by the author. The special yoga breathing like *bhastrika* or the rapid bellows breathing commended with certain yoga postures other than the meditative poses is, in the precise scientific terms, quite arrhythmic and often unproductive, besides being, at times, very uncomfortable.

In contrast, the Yogendra rhythm is methodically divided into either two or four sections, depending upon the need and duration of any particular movement. When the breathing is twofold, retention and suspension of breath—technically known as the inspiratory (*kumbhaka*) and expiratory (*śūnyaka*) standstills—are avoided, thus, adding to the periods necessary for prolonged inhalation (*pūraka*) and exhalation (*recaka*). For retention, the Gorakṣa ratio of nearly 1 : 2 : 1 has been found very satisfactory.<sup>71</sup> Suspension

71 Cf. *Yoga Personal Hygiene* by Shri Yogendra, p. 183f.

becomes necessary in an exercise that needs pause after the movement associated with exhalation. In this way, fullest opportunity is given both to the lungs and the diaphragm for deep and vigorous accommodation and action by precisely determining the exact moment and length of periods of inhalation, retention, exhalation, and suspension most suited to any given exercise.

To appreciate the above, it may be pointed out that, what people generally do while taking exercise is that they either go on inhaling all the time or retain the breath without the least effort or harmony. Then possibly in the midst of an exercise, the breath is thrown out all of a sudden—out of sheer necessity—when it may have been hygienic to inhale. Such respiratory maladjustments detract much from the healthful effects of physical education.

In addition, the training in the daily yoga exercises with the new rhythm of breathing gradually habituates the practitioner to one to two breaths per minute. To the earnest students of Yoga, it bears a great significance inasmuch as such habituation serves as a stepping stone in the advanced study of yoga breathing and the control of *prāṇa*.

(e) *Influence on Various Systems of the Body* It is a familiar fact that, when the muscles are made to repeat a movement many times, they become fatigued. And, it is also a known physiologic fact that muscular fatigue generates chemical



substances which act as poison to the blood stream. The stretching and contracting of the opposing muscles in Yoga by eliminating repetition minimize the risk of muscular fatigue without sacrificing the basic physiologic benefits which accrue largely due to specific mechanical arrangements of the various parts of the body.

Even if we are to consider the dynamic variations of the yoga poses as evolved by the Yogendra school, their rhythmic and essentially slow movements do not differ much from their static prototypes. Moreover, what good of prolonged fixation is lost in the latter is well compensated by interactions on the deep and the less used muscles in the former. This is made possible through novel postural adjustments involving such alternate stretching and relaxation movements as favourably effect both the usually inactive and the deep muscles. During pause and standstill, the prolonged deep pressure on the internal organs stimulates the venous flow and, thus, favourably influences acute hyperemia and vasomotoricity, a characteristic function of the yoga exercises for endurance.

It may be further pointed out that, the effect of yoga physical education on the digestive system—when it is regular and not immoderate in amount—is more favourable than during any violent or strenuous exercise simply because it does not deprive that system of the normal supply of blood otherwise compelled to be sacrificed to the muscles during

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muscular exertion. What is more, (i) due to a static condition of the skeleton muscles, (ii) due to the favourable changes in the respiratory actions, (iii) due to the deep and forceful movements of the diaphragm, (iv) due to the mechanical intra abdominal compression, and (v) due often to an additional gravity pressure, all the organs of digestion which are contained within the abdomen receive an increased supply of blood richer in quality because of the increased respiratory activity through *Yogendra rhythm*.

Laboratory evidence is clear on this issue that if plenty of oxygen bearing blood is rhythmically pumped out to the muscles and the internal organs they will not tire because no lactic acid need form where the rate of metabolism is ideally coördinated. Jolli contends that muscle fatigue can be easily compensated by deep breathing. *Asana* when incorporated with *Yogendra rhythm* helps to sustain the normal rate of metabolism even while exercising.

Prolonged, deep, and rhythmic breathing associated with each movement also multiplies the efficiency of the respiratory system. The very high rise in breathing capacity, thus, cultivated during the yoga exercises, as explained previously, increases the respiratory capacity and, therefore, the vital index without causing any strain on other systems of the body. Further, because of the presence of more oxygen in the blood during yoga exercises, all the other systems of the body, through the rapid interchange of products, derive the additional

advantage of richer blood supply. In trained people who follow Yoga, the vasomotor adjustments reduce the danger of fatigue to the minimum.

Similarly, the general and specific effects on the endocrine glands are salutary because of the possibility of manipulation in accelerating the supply of blood to any particular part of the body without much strain or loss of muscular energy. By increasing the intracapillary pressure, as in the case of certain postures, the flow of lymph is considerably aided resulting in better tone and nutriment of the tissue elements. The cumulative effect of the cellular health, which affects all organs including the endocrine glands, is reflected on the mental perspective and, thus, on the character behaviour and personality of the student. It is this mental transformation from the ignoble to the noble which Yoga seeks to promote, in some measure, through special physical education.<sup>72</sup>

For this reason, what Yoga regards as of greater significance than the above is the effect of physical training on the nervous system. In Yoga the physical body merely serves an instrument of education for the mind, and the nervous system, therefore, assumes paramount importance.<sup>73</sup> All yoga exercises have this as their basic ideal. The

<sup>72</sup> This specific feature of Yoga is now fully recognized by all authorities on physical education. Cf. *Physical Education and Healthful Living* by F. J. Massey p. 78 and *A Brief History of Physical Education* by E. A. Rice and J. L. Hutchinson, p. 182.

<sup>73</sup> Cf. *Yogayājñavalkyam* III 18.

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emphasis on sufficient exercise for *merudanda* or the vertebral column is, after all, not without much scientific import. In addition the care of the brain is not neglected. In the case of the former the exercises for anterior stretching and posterior contraction, reversely, anterior contraction and posterior stretching and the lateral twists of the spine offer the best means for maximum stretching and relaxation—of the opposing pairs of muscles—and also for the natural adjustment of the vertebrae. The enlargement of the vertebral foramina relieves the pressure on the spinal nerves and aids circulation. The head low exercises in the case of the latter, provide for a much larger supply of blood to the brain due to the mechanical aid of gravity. Besides balance between and tone to the three inter-related nervous systems, such exercises stimulate regeneration of Nissl's granules and promote osmosis through the medium of the plasma. The capillaries and the end organs thus sustain their normal tone.

Above all, by avoiding repetition of movements the continuity of nervous stimulation during the yoga exercises is reduced to the minimum. The respiratory standstills in the dynamic and the pause in the static postural exercises by providing relaxation to certain sets of muscles contribute also to sedative reaction and therefore, soothe the nervous system. The general efficiency of the nervous system too is enhanced through favourable changes in the nerve cells under complete harmony of all the other systems of the body.

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channels to which the resulting good health is directed

Another potent source of confusion is the novel and diabolic advocacy of Kuvalayananda and others for an unhealthy and unwarranted wedlock of the yoga posture exercises with other systems of physical training—and, strangely enough, for no special reason but that of "*strength and violence to protect,*" what is assumed to be, "*the motherland,*" as if to the genuine yogin the whole universe is not his very motherland! This ill-conceived and subtle introduction of patriotism in the universal and immaculate concept of Yoga and of violence in the traditionally non violent physical education is at once and *prima facie* reprehensible in the extreme, and, what is more, it virtually exposes such a compromise as wholly unworthy of the yoga heritage and traditions. Such preposterous backsliding, while it may temporarily bring cheap popularity to its preachers, positively knocks the very bottom out of the very high moral issues involved in the selection of postures as the ideal form of physical education suited to Yoga.

What is even worse, from a long range point of view, is its implicit reaction which practically amounts to a direct incentive to others to similarly cultivate strength and violence to protect what they would claim to be their own motherland whereby the vicious circle for that abominable slogan of health for strength and strength for violence is, indeed, completed. This *rolle face* of the so-called

## SYSTEMS OF PHYSICAL TRAINING EXAMINED

teachers of Yoga must, therefore, mortify all earnest students seeing as they do that such violent ideology of health has, in effect, turned this already unhappy earth into an inferno. But, there can be nothing surprising about such edicts emanating from pseudo yogins since such unbenign spirit is quite natural to those whose profession and practice of Yoga, as a matter of fact, remain condemned because the two are never in accord. There is no place for hypocrisy in *kriya yoga*.

Notwithstanding the ironical regression in the *Bhagavadgita* and the paradoxical laxity with regard to *anurata* (Vyasa and Vacaspati),<sup>15</sup> the fact remains that the central objective of the yoga physical education is the cultivation of and habituation to the spirit of non violence. Any system of physical training which is likely to breed militant spirit is, in terms of true Yoga, amoral and, from a long range point of view, anti social. Yoga, therefore, very naturally insists on the non violent virtue of physical education. This applies not only to the actual technique to be so employed but to the virtue which is supposed to be inherent even in its most subtle moral and mental influence. As a consequence, so intimately related become its interests to the higher moral and mental life that any attempt to associate its physical training—or, for that matter, any of its technique even in the other planes—with any other system having

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anti-yoga perspective remains automatically unauthorized and repugnant.

Divorced from mental and moral purity, what are all systems of physical education, if not the mere sources of biologic and mechanical enlargement of animality? According to Yoga, physical education which metamorphoses man into a robot is vulgar, anti-human and perversive. Thus, while Yoga firmly believes in good health and therefore in a system of physical education which endow it, it certainly regards the enlargement of animality as detrimental to human progress and happiness, not to speak of spiritual evolution. Viewed from higher levels of life, the yoga insistence on moral and mental purity as the guiding line in formulating any scheme of physical training is at once prophetic and full of significance. This is so because it is extremely far-sighted, scientifically precise, culturally ideal and, above all, immaculately realistic.

Just think, how less difficult and painful would have been our multiple experiences and problems today had the powers-that-be in various civilized countries given ere this some serious thought to the varied interrelated influences of physical education? Yoga holds that, misuse of physical education, in absence of mental and moral discipline (*yamanyama*), could hardly be avoided; and, in that case, any addition to man's biologic and mechanical power is fraught with the most dangerous consequences which no State and no

individual should, in any way or at any stage, encourage. Unhappily for this world, however, it is just this very vile design of adding to man's bestial power without the compensating moral elevation which seems to interest—is a mock measure of self preservation based on the use of force—the leading political States in lavishly supporting all sorts of physical training schemes through educational institutions under their control. These sins of omission and commission in physical education thus pollute the youths of the world, and no wonder the horrors of aggression and war do overtake us every few years. The first lesson in yoga physical education has yet to be learnt, till then the world must continue to suffer the pains and penalties for the sins of the strong.

Five thousand years ago, the ancient pioneers of physical education the yogins, knowing the human nature and complexities as they did, anticipated this very vital conflict between physical education purely for good health and/or for animality, and while they stressed the former, they disclaimed the latter. Yoga, therefore, wisely directs its appeal not to the powers that be who are incorrigible—in their own interests—but to the individual students who seek health for health's sake and would fain have finer and nobler things of life to which such health must in earnest be applied rather than the cultivation of animality for ignoble purposes. Thus then is another vital difference between the yoga and non yoga physical



education which must not be lost sight of either by the students interested in their study or by the scientists concerned with scientific evaluation.

Physiology of non-violent and non-fatiguing exercises requires that the movements should be (i) slow and, wherever possible, even static, (ii) free from vigorous effort and strain, (iii) barmonic, as far as the outer rhythm contributes to the inner harmony, and (iv) sedative, i.e., involving minimum of muscular and nervous agitation. Its psychological counterpart must provide for (i) poise, (ii) ease and quietude, (iii) steadfast barmony and inwardness, and (iv) placidity—the total absence of display or of ulterior mooring precluding all emotional influences likely to affect the endocrine glands, cortorial inhibitions, mental equilibrium, and personality.

The few enigmatic social and moral virtues of violent or vigorous gymnastics when practised in groups or masses, however, are often more than counterbalanced by unhygienic physiologic and psychologic affects of demonstrative urge, attendant distractions, subjective susceptibilities, and temporary or permanent emotional complexes which, for the time being, are generally overlooked in the first flush of enthusiasm but nonetheless persist for long even after the exercise. To deny this is to deny human nature. The traditional recommendation to the yoga students for individual and private practice of posture exercises, therefore, is easily understandable. That this is in sharp

contrast to the competitive urge and display associated with most forms of gymnastics is self-evident

Lastly, as a rule, the habitual fixation during the yoga exercises—undisturbed by any extraneous influences—tends to poise and quietude as against continued agitation during repeated movements. In like manner, inwardness, ease and rhythm contribute to psychic stamina, and the feeling of good health and harmony, thus, remains sedative and positive. In short, over and above the many relative organismic benefits discussed previously, the non-violent and non-fatiguing characteristic of the yoga physical exercises is a special ennobling feature which needs must commend itself to the earnest seekers after pure good health.

## CHAPTER IV

### PRELIMINARIES TO ĀSANA-PRAṆĀYAMA

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*Consideration of Age—Privacy and Quietude—Emotional  
Shut off—Concentration on Movements—Suitable Time—  
Amount of Exercise—Relaxation—Balanced Dietary—  
Essential Suggestions*

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#### CONSIDERATION OF AGE

THE very wide general observation by the ancient authorities affirms that not only the young and the old but even the very old, the sick and the infirm can undertake the practice of Yoga with success and, thus, achieve the highest fruit thereof<sup>76</sup> What it obviously suggests is that people of all ages and classes are permitted to practise Yoga<sup>77</sup> Notwithstanding this simple generalization, however, it stands to reason that the yoga physical education needs to be regulated with great care in relation to the age of an individual For example the volume of the heart in childhood is proportionately smaller to the diameter of the arteries than it is later on And, even though the volume of the heart is increased twelvefold, during adolescence, the heart is still quite unprepared to

<sup>76</sup> Cf. *Hathayogapradīpikā* I, 64

<sup>77</sup> Cf. *Yogabhyāsaśāstra*, VI, 62

withstand strain. Consequently, for reasons of organic accommodation, like the early adolescence, even the middle age is regarded by the medical authorities as the danger period during which unusual physical exertion should be avoided.<sup>78</sup>

Having regard to this, it is advisable that children under the age of five years should not be initiated into the yoga exercises, their free natural movements and play being considered sufficient for the harmonic growth of the various organs and parts of the body. Between the ages of five and ten years, for the growth and education of the body and mind, the internal organs may be trained to coördination and effects of exercise through the practice of yoga prayer and meditative poses. Character building factors could thus be gradually incorporated side by side with organic development.

From the beginning of the tenth to the end of the sixteenth year, which is really the time for most rapid growth both in height and weight, the youth whose cortical areas of the brain are fast developing should be encouraged to daily systematic exercise. Besides the meditative poses,<sup>79</sup> corrective and cultural postures with their dynamic variations should be followed duly with mathematical precision suited to the gradually increasing capacity of each individual. Interrelated

<sup>78</sup> This caution has led to another extreme as in the case of Steinerohn who decries regular exercise and calls it a dangerous fad. Cf *How to Keep Fit without Exercise* by P. J. Steinerohn p. 49.

<sup>79</sup> Cf *Yoga Studies*.

connection between the physical and psychical functions should be so encouraged as to permit the physical well being to promote favourably the psychic balance still in its formative stage

What needs emphasis is that feats of strength, of endurance, of breathing and such other demonstrations should be strictly discouraged, and the virtue of physical education for no other purpose but that of physical, mental and spiritual health and discipline must be continually ingrained. This is imperative for the very simple reason that at this impressive period of the youth, under no circumstances, should he be exploited to serve demonstrative expediencies or to form unhealthy notions about many crude purposes to which good health is supposed to be applied. Excessive exercise and strain—consequent upon competitive urge and love of display—definitely injure the vital organs either temporarily or permanently, and the yoga physical exercises, therefore, must be free first from all subterfuges and secondly ought to be so graded as to meet just the actual hygienic need of physical training and nothing else. The modern yoga demonstrators, athletes, gymnasts, acrobats and contortionists are more a disgrace to yoga culture and science than an honour because they represent merely the vulgar extreme of what is so classic and pure in yoga physical culture.

Till about the middle age, i.e., upto the fortieth year, there is no great risk in following more energetically the course of yoga exercises or even in

adding a few more varieties of complicated poses, breathing exercises and other processes. The body will not only gain in neuromuscular and cortical education through an increase in organismic stamina during these years but will also provide for longevity through such essential training in harmony, endurance and accommodation of the internal organs as provides for physiologic equilibrium even during adverse conditions of living.

After the middle age till the infirmity of old age, the need for daily exercise becomes even more imperative, especially with regard to its unbroken regularity. "There is also substantiated scientific evidence that *moderate* and *regular* exercise stimulates a normalizing of important endocrine secretions which contribute to health and well being."<sup>80</sup> The mild systematic yoga asanas are most indicated for such hygienic purpose and may be followed with exemplary daily rhythm and regularity. This is with a view to preserving the normal functions of the various organs of the body. The yoga exercises, however, which tend to pain or strain the muscles—that may have become inelastic due to old age—may be gradually omitted. With reference to this, it may be mentioned that very promising results have been observed in persons above eighty years who were advised to curtail the yoga physical exercises and to replenish the course with simple Yogendra *pranayama*—the

<sup>80</sup> Cf. *Physical Education and Healthful Living* by F. J. Massey  
p. 118

special technique in yoga breathing developed by the author <sup>81</sup>

## PRIVACY AND QUIETUDE

The first essential to the practice of the yoga posture exercises is a quiet and well-ventilated place which is free from dust and insects. As far as possible, the student needs to be alone because it helps one to exclude all disturbing factors and, thus, to achieve personal harmony with any specified undertaking whether posture exercises, breathing methods or concentration. Those, however, who cannot arrange to be alone, or be in a quiet place, due to peculiar circumstances over which they have no control, should make the best use of a corner available, and practise the exercises in silence with perfect disregard of the surroundings. Where this fails, they should seek out-of-the-way places which offer protection, shelter, privacy, fresh air and quietude <sup>82</sup>

Moreover, the place so selected must also be free from moisture, draught, unpleasant smell and memories—all this with a view to precluding any unfavourable influences of physical or mental nature and the attendant distractions. Once approved, it is best to use the same place every day in order to build up a congenial environment which is to make one feel easily at home. This

81 Cf. *Yoga Studies*

82 Cf. *Yogacintamani* p. 98f

## EMOTIONAL SHUT-OFF

conditioning has a somewhat mechanical affect of security, poise and agreeableness

## EMOTIONAL SHUT-OFF

So that the physical benefits of the yoga exercises may accrue with scientific precision, the authorities found it necessary to prescribe—what may be termed—emotional shut-off. Whether 5000 years ago the ancient yogins knew all about the varied influences and affects of emotions on the body and the mind in exactly the same scientific details as do our modern endocrinologists and psychoanalysts respectively is certainly debatable, but the fact, however, remains that they were quite alive to the vital affects of emotions on both the body and the mind. That this happens through the media of endocrine glands is now evident. There is, therefore, nothing surprising about the yoga insistence on emotional shut-off to ensure maximum result even in the field of physical education. In contrast with this yoga attitude, the modern authorities on physical education regard emotion as definite modes of response which are modifiable and when properly guided help to shape individual character traits and personality. It is believed that proper modification will eventually lead to emotional stability which will sustain the individual in meeting the emotional crisis of life<sup>83</sup>. But it is not denied that no matter how emotions are modified, they cannot fail to

83 Cf *Introduction to Physical Education*, by J. R. Sharman, p. 77



affect the mind which should remain free of all modifications if the yoga object to reach the stage of consciousness absolute (*tairalya*) is to be realized

Strictly as a measure of good health, any exercise taken during periods of violent emotions, moods, or temperamental depravities positively detracts much from its healthful physiologic interactions. Not that one cannot perform any exercise while angry, melancholy or otherwise emotionally disturbed, for, after all, mechanical adjustments of the body are quite possible even during such conditions, but certainly such an exercise does not contribute to harmony or to hygienic results expected of it. Consequently, the need to free oneself from any element of an emotional nature, before and during the practice of yoga exercises, becomes imperative and, therefore, insisted on by the authorities. So, begin the exercise with an evenness of feeling and an undisturbed mind (*sarvacintaravayitah*)

The experimental data at the Institute, however, supply evidence on the other hand of the even possibility of the emotional agitation being considerably lessened by engaging oneself in the rhythmic movements of exercise and breathing. François Delsarte had his psychophysical system founded upon this assumption where perfect unison of harmonic gymnastics and dynamic breathing helped the formulation of noble ideas in the mind. Eurhythmic gymnastics conduce singleness of attention, control of nerves, and mental relaxation

## CONCENTRATION ON MOVEMENTS

Thus, in exact proportion to the cumulative attention to exercise or breathing, the mind becomes more and more calm until finally the emotional agitation is gradually but completely eliminated. So while it is good to be able to begin your exercise with evenness of feeling to get the best physiologic reactions, you must not neglect it just because you may be upset, for this reason that there is every chance for you to gain mastery over your fitful moods and temperament also through sedative exercise.

## CONCENTRATION ON MOVEMENTS

Regarded from this point of view, much additional benefit from exercise may be gained by the conscious association of the mind to the varying movements of the body. To ensure the best results as in every activity, the mind should be concentrated only on the work, and each exercise should be performed with maximum precision and will power.

In the beginning, in order to create interest in and appreciation of the muscular movements of the body, it is well to perform the exercises before a mirror. This will help concentration of the mind on particular parts of the body, and the faults can be corrected better. Later this distraction may be avoided to keep the mind free from any object.

When practised with absolute regularity, the mental effort will synchronize automatically with each muscle that moves in every exercise, and

the exercises themselves will soon grow into the daily habits of life—the disinclination to exercise which follows erratic performance soon disappearing. This habituation (*abhyāsa*) leads to uniformity of pattern response of no-mind physical effortlessness.

Those in the East and the West who suggest that the yoga exercises are unsuited to persons lacking in meditative temperament are quite far from being scientifically correct, whatever their motive for such an imputation be. As matters stand, in all that concerns physical education, the yoga postures, like any other form of exercise can be practised by anyone even without any special concentration or will-power. They then represent purely the mechanical aspect of the body movements and thus involve only the usual attention and effort required in any form of physical training. In consequence, when the yoga postures are practised—especially for the physical well-being—their beneficial physiologic effects accrue in a scientific manner, irrespective of any possible need for meditative temperament. Any lack of meditative temperament therefore, does not preclude one from undertaking the practice of *āsanas* as a health measure.<sup>84</sup> On the contrary, what is abundantly clear is the need for meditative temperament and concentration, if the greatest good—physical, mental, moral and spiritual—is to be gained through the medium of physical

84 Cf. *Yoga*, Vol. IV, pp 171 and 173

## AMOUNT OF EXERCISE

training, as is inherent in the unique scheme of yoga postures

### SUITABLE TIME

Before beginning the exercise, it is advisable to evacuate the bladder and the bowels clean the nose and throat of all mucus, and drink a glassful of water neither too hot nor too cold. Then begin after fifteen minutes.

The time best adapted for exercising is in the morning before breakfast since at this time the vitality is at its highest and the movements can be done with a sense of ease, freshness, vigour and a great deal of mental calmness. There is also the additional advantage of great regularity if the programme of exercise is treated as a daily hygienic duty, like other calls of Nature.

What needs emphasis is the fact that, of all the seasons, yoga posture exercises have to be followed with particular zeal and regularity during *winter*, if the normal circulation is to be maintained and the blood kept warm for uniform good health.

If due to pressing obligations the morning hours could not be availed, the best time in the evening is before dinner, provided you are not tired. In that case, relaxation poses are to be given priority in sequence over other yoga exercises.

### AMOUNT OF EXERCISE

It is, indeed, difficult to fix hard and fast rules about the exact amount of exercise which should be taken daily by an individual. Many persons

continue to enjoy good health who take no systematic exercise at all. May be their daily work provides them with the essential need for physical training. Doubtless those engaged in manual labour do not require a weary round of many yoga exercises at the end of their day's toil. Only those who have less of manual work to do or are of sedentary habits actually stand in need of daily systematic exercise to ensure normal good health. That the body can keep healthy without any care or physical education is an unscientific notion. On the contrary, it is only the daily care and exercise that keeps it healthy.

According to Parkes the amount of exercise which an ordinary man should take is equivalent to about 150 foot tons or very much the same as walking about 9 miles on a good level road. But since a certain amount of bodily exertion enters into the daily work of all healthy persons, no uniform standard—as to the amount of exercise one should take—could be fixed with anything like scientific accuracy. Two things, however, are important: first, it should not be so meager as to be ineffective and secondly it should never be so much as to cease to be hygienic due to sheer excess. Where this happens the muscles of the heart undergo a change and even scoliosis of fatigue may permanently damage organismic harmony. Moderation in physical exercise as in everything else, is strongly recommended by Yoga.<sup>25</sup>

25 Cf. *Hathayogapradīpikā* with *Yogabodhi*, I 51

Most authors of home exercises regard fifteen minutes of daily dose of vigorous gymnastics as a safe standard for persons of average capacity. But, because of their static character in the case of original poses and very slow movements in the case of their dynamic variations, the standard dose of daily yoga exercises may have to be varied between twenty five to thirty minutes.

What needs to be impressed however is that when, as too often happens the daily dose is missed the same should be made good as soon as possible at some other time of the day or, at the latest the next day. This is extremely essential to maintaining the daily health rhythm consequent upon the wholesome equilibrium of a well rounded hygienic life. In short, whenever the opportunity for yoga exercise is missed for one reason or another the balance must be restored quickly by an extra dose the very next day. In the practice of Yoga regularity in training (*abhyasa*) is one of the two fundamental sources of success<sup>86</sup>. What is more in the light of our observations, is the fact that for persons above the age of thirty the need for regularity in exercise is the greatest.

Voluntary effort is always pleasant at first and ought never to degenerate even in the case of Yoga into a mere drudgery. It may become so when it is too protracted or when there is no genuine interest in it. If this happens to be temporary,

<sup>86</sup> Cf. Vyasa-bhāṣya I 1<sup>st</sup> 13f

due to the pressure of emotions or circumstances, the practice may be stayed till enthusiasm returns. But, in the case of laziness,<sup>87</sup> perseverance is helpful for it has been proved that exercise in which one is not emotionally interested does not lose its special physiologic virtues. Persons who regarded physical exercise as an unceasing bore have been surprised to find their health considerably improved by a systematic course of yoga exercises. So, remember that, exercise when prescribed is helpful, when self imposed is wholesome, and when it is to which one is naturally attracted it is most healthful.

### RELAXATION

Whenever fatigue is experienced, during the practice of Yoga, the authorities commend intervals of relaxation.<sup>88</sup> This is mainly with a view to minimizing the evil effects of excess or strain—particularly involving the nervous system for the perfect health of which most yoga exercises are applied. It was evident to the ancient yogins then as it is to our modern investigators in the physiology of athletics now that the evils of excess in exercise are as many and more than their benefits.

Unfortunately, however, in all system of modern physical training, excluding the various systems of home exercises, there is very little room for paying

87 Sloth (*alasya*) and languor are regarded as the enemies of the yogin which by distraction act as obstacles in the path of Yoga. Cf. Vyasaśharya, I 30

88 Cf. Cf. *Haṭhयोगopadeśpīṭh*, I, 32

heed to Nature's fatigue signals. But, for all that, it ought to be remembered that muscular relaxation is the natural and best complement of muscular exercise so that whenever fatigue is experienced, it should be immediately compensated by an interval of relaxation.

### BALANCED DIETARY

The value of dietetics for the growth of the body, the maintenance of good health, and the prolongation of life besides its application as a therapeutic measure in the treatment of diseases was fully known in India not only to the yoga hygienists but also to the ancient medical authorities<sup>89</sup>. It is also becoming increasingly evident to the modern dietitians that the value of food transcends not the mere nutritive values in the physiological sense but also has its counterpart in the psychological tendencies. Inversely certain psychological and physiological peculiarities create appetite for like foods from which such elements could be nourished. This inter-dependence of food values in relation to both the body and the mind and *vice versa* was fully realized by the yogins thousands of years ago<sup>90</sup>.

Yoga maintains that matter (*prakṛti*) which of course, includes chemicals either nutrients or otherwise is to be found in three evolutionary stages, namely, of the characteristics (*guṇas*) of

89 Cf *Yoga Personal Hygiene* pp 299ff

90 Cf *Yoga* Vol IV p 166



intertia (*tamas*), of activity (*rajas*) and of pure animation (*sattva*) That these differences are in fact due to degrees of sensitivity of rates of vibrations is something which still needs to be precisely determined by scientific experiments

"Chemically and physically elements may be the same, but their rates of vibrations differ according to their scale of evolution The calcium in a lime bed may be likened to a dull apathy, as compared with the heightened consciousness of calcium abounding in the bones of an ox Nor is the calcium occurring in the bones of an ox, or in the coarse Bushman of the primitive world of the same quality or of the same degree of sensitivity as is calcium resident in the bones of a philosopher or genius"<sup>91</sup> That the chemicals of our diet are constantly undergoing sublimating processes is a scientific fact known to the yogins but which still needs appreciation and proper evaluation by modern dietitians

Based on this higher dietetic conception, Yoga holds, irrespective of their ethical principal of non injury (*ahimsa*), that man really is a herbivorous animal The ideal food for man which contributes to greater endurance consists of grains, dairy products, vegetables, fruits, nuts, honey and nutritive roots All nutrients which are pure, agreeable, sweet, nourishing and easily digestible become generally recommended No spices are to

91 Cf *Ibid* Vol V & p 16

be used as these have been found to be stimulating and harmful. Even the use of common salt is regarded as detrimental to good health. Highly seasoned foods and stimulating drinks are unsalutary to the yogin. Things that are sharp, sour, pungent, bitter and heating are likewise prohibited.

The balanced yoga dietary for the human should be spaced by an interval of four hours between each meal. Breakfast may be made up of milk, a little of whole wheat preparation, honey and dried or fresh fruits. At noon vegetable soup, preparations from grains, fresh green vegetables and roots, salads and fresh curd or buttermilk should provide the lunch. In the evening, fruit juices, nuts and a small quantity of preparation either from whole wheat or other grains may make up what is generally a light refreshment. The dinner is to be taken at least an hour before going to bed and should consist of preparations from grains, dairy products, green vegetables and juicy fruits. The ratio for the composition of meals is somewhat like this: grains to contain 30 per cent of the calorific value needed for the individual, dairy products 20 per cent, vegetables and roots 25 per cent, fruits and honey 20 per cent, and nuts to make up the balance of 5 per cent for a wholesome (*sattvic*) dietary.

Regarding the quantity of food moderation (*mitāhāra*) is emphasized as the guiding line, i.e., to eat no more or no less than what is absolutely necessary to satisfy one's natural appetite. Fasting

or eating only once a day is regarded as harmful, just as overeating is. Stale food and non nutrients are prohibited<sup>92</sup>

### ESSENTIAL SUGGESTIONS

Temperature and seasons permitting, open air exercise is the best, whenever possible. In the case of indoor practice, however, the room should be well ventilated but free from draughts having the windows kept at suitable angles or, as in the foreign countries, down from the top and up from the bottom.

The clothing of the body should be sparing and loose fitting. During exercise, the more the skin is exposed to air, the better. The body must be left unimpeded for free movements. The feet should be bare to allow of proper exercise to the lower limbs. In winter, unless in sunshine, keep the body warm with suitable clothing. White cotton or silk clothes are preferable for air hygiene.

The mouth should be closed, and exhale and inhale only through the nose. Quick and jerky breathing might impair the elasticity of the lung structure, and it is, therefore, advisable to take in slow rhythmic breaths and exhale in one continuous and long rhythm. Each breathing movement must be deep and full. As a rule, the yoga postural exercises should be performed on an empty stomach alternatively, an hour before or after food.

<sup>92</sup> Cf *Yoga Personal Hygiene* pp 229 et seq

Never use the bare floor for exercise. Always provide a mat (6 X 3 feet) of *kula* or other grass, a woollen carpet, or a well tanned hide—preferably of a deer or a tiger<sup>93</sup>. A clean sheet should then be spread over any one of these as available, and this should be washed daily, after each use. The object is to ensure hygienic security, comfort and uniformity of temperature by insulation against ground contact.

93 Cf *Bhagavadg* II, VI 11

## CHAPTER V

### DAILY YOGA EXERCISES

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*The Perfect Course—Sukhāsana—Talasana and its Four Variations—Kongāsana and its Three Variations—A Variation of Utkāṣasana—Antero Posterior Cakrasana—Simple Bhadrasana—Yogamudra and its Two Variations—Paścimottāṣasana and its Variation—Dhanurvakrasana—Ardha Matsyendrasana—Twofold Pavanamuktasana—Sarvaṅgasana—Śavasana*

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#### THE PERFECT COURSE

THE perfect course of non violent yoga exercises should necessarily consist of such bodily movements as would encourage harmonious and normal development and function of all the organs and muscles of the body with the least physical and mental fatigue or violence. Yoga asserts, as does physiology, that every part of the body needs physical exercise, and the ideal course should, therefore, include exercises for the arms, the legs, the neck, the chest, the abdomen, the waist, the spine and the various other parts of the body. A thorough study of the human organism through anatomy, physiology and kinesiology is essential for formulating exercises both for constitutional and corrective purposes. The ideal condition of the muscular system determines the ability of the

skeleton muscles to hold the trunk and other parts of the body in their natural position for efficient functioning which in turn insures normal response from the circulatory, respiratory, nervous, digestive and excretory systems

Since the daily duties of an individual offer a certain amount of exercise to various groups of muscles, perhaps, the most important of all needs of physical education is the need of exercise for the usually unused or less used muscles. Even those whose work is largely muscular—unless it involves most of the muscular system—because of their routine use of certain fixed sets of muscles, stand in great need for the exercise of the unused and less used muscles. Notwithstanding the law of synergic movement wherein the unused muscles profit by the exercise of those which are used, the need for such exercise as directly effects the unused and less used muscles is still imperative and extremely healthful. For this obviously hygienic reason, in selecting the regimen of the daily yoga postural exercises, much care and importance has been given to this particular aspect, with a view to providing adequate physical exercise for the generally unused or less used muscles.

Moreover, the perfect system of physical training, if it is to be popular, must not be so elaborate as to be prohibitive for daily practice, nor should it be so complicated and arduous as to offer much difficulty either in mastering its technique or in adapting it to the daily routine. In addition

it should not try to overlook, underestimate, or exaggerate the importance of any particular set or sets of muscles to the disadvantage of others. Opinions, however, are likely to vary as to such a standard; but, more or less equal amount of exercise for all muscles *in turn* may be regarded as a sound basis for any course of daily physical exercises.

After years of observation at The Yoga Institutes both in India and America, the author has come to the conclusion—with due regard to and after a comparative study of many other systems—that the course of daily yoga postural exercises to be given hereafter constitutes by far the most effective and perfect system of physical education. On the whole, they are simple, rhythmic and scientifically coördinated with breathing, and require no accessory in the form of mechanical apparatus. You can open the windows of your room, let in plenty of fresh air and begin whenever convenient. What with the precise instructions, there is no need even for an instructor or the yoga teacher.

The number of movements suggested for the dynamic variations is based upon the strength of an average normal adult; but, this could be very easily adjusted and modified to meet the requirements of individual cases. In the beginning, however, it is advisable that the movements be followed slowly and carefully, and possibly only once or twice in the first week. In the case of the static poses, begin with the minimum period of

five seconds in the first week, and then gradually raise it to not beyond three minutes as a routine practice. A longer period is indicated only in the case of those who are solely devoted to the study of Yoga.

## SUKHĀSANA

Irrespective of the individual's interest whether in physical training, mental discipline or spiritual realization, preference in the yoga exercises is given first and always to the proficiency in any one meditative posture for composure, ease, breathing and concentration. In all, there are twenty-eight meditative postures in sitting. Notwithstanding the old tradition which regarded *siddhāsana* or the perfect-pose and *padmāsana* or the lotus-pose as the classical poses suited to meditation, like Vācaspati, the great yoga commentator, the author has found *sukhāsana* or the easy-pose as the one most preferable and convenient in actual practice. This pose conforms readily to all the requirements of bodily comfort and steadiness (*sthīrasukhamāsanam*)<sup>94</sup>. Although unsuited to persons accustomed to sitting on a chair, to all others it may prove comparatively easy of practice and, therefore, can be maintained for a considerable length of time both during the practice of yoga breathing methods and concentration.

<sup>94</sup> Cf. *Yogasūtra*, II, 46. "The ideal muscular equipment is that which has just enough margin of strength and endurance to maintain posture without effort." Cf. *Physical Education and Healthful Living*, by F. J. Massey, p. 85.



Sit on the floor—of course, not a bare floor but the one covered with any one of the articles previously specified—with your legs fully stretched out. Now bend one of the legs—alternate use being preferred—and place the heel under the opposite thigh. Then fold the other leg, place the heel under the opposite thigh and sit in a cross-legged fashion, having the ankles also crossed. Keep the body straight, the spine erect, the abdomen well-controlled and the head perfectly poised. Finally, place the hands on the respective knees, palms downward, completely relax the body-tension, close your eyes and be composed. See frontispiece. Mentally watch the breath going in and out just for one full minute, and only after you are fully self possessed “like patience on a monument smiling at grief”, begin the other yoga exercises in perfect peace.

To those who are quite unaccustomed to Oriental methods of sitting, even this very simple pose may offer some difficulty in the very beginning but through constant practice this may be gradually overcome.

Being essentially a meditative posture, *sukhasana* does not claim special physiological virtues beyond those which accrue from the practice of similar meditative poses<sup>95</sup>. In the daily course, its value lies in establishing inner harmony with oneself, elation through poise and composure through

95 Cf *Yoga Studies*

## TĀLASANA AND ITS FOUR VARIATIONS

elimination of muscular and nervous agitation, thus, providing the most favourable condition for the practice of other exercises to follow

## TĀLASANA AND ITS FOUR VARIATIONS

According to both Yoga and modern physiology, the first essential to good health, so far as the body is concerned, is full stature—that is, height—which permits of free and natural accommodation of the internal organs. Stunted figures, with the exception of those affected by heredity as in the case of pigmies, tell the woeful tale of the crowded organs within. That height, when physiologically found necessary, can be definitely increased with the aid of suitable physical exercise not only up to the twenty-fifth year as commonly supposed but even a few years after maturity has been proved in the light of the experimental and clinical data available at the Institute.<sup>90</sup>

This increase in height is made possible through the full length stretching of the body which is greatly aided by the coördinated breathing rhythm. Among the group of simple yoga postures, *talasana* or the palmæ-pose—often incorrectly referred to by some modern writers on Yoga as *tadasana*—and its four dynamic variants offer the very best means for increasing height.

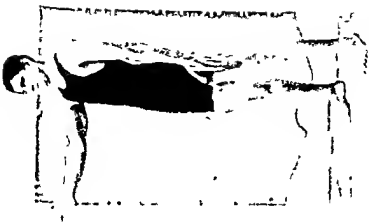
I First secure the correct standing pose as shown in FIG. 4. Keep the feet either together

<sup>90</sup> Cf. *Clinical Records of The Yoga Institute*

or apart—as may be convenient—and parallel, the hands at their respective sides and the chest thrown well forward, the neck straight, the abdomen in normal contour, and the chin drawn in. As you raise one arm forward—alternate use being preferred with each exercise—in front, for an upward stretch, *slowly begin taking in the breath* in such a way as to enable you to complete a full breath by the time the arm reaches a vertical position, synchronizing simultaneously the rising on the toes as shown in FIG 5. Now with the complete upward stretch of the arm, complete also the deep breath, till you feel as if you “would burst”. Rise fully on the tiptoe, and retaining the breath stretch your body upward to the maximum height, as illustrated in FIG 6. Maintain this pose for four seconds.

After this brief standstill, gradually reverse the whole movement, *slowly throwing out the breath* as the arm (kept straight) returns to its normal position through a backward and downward circuit. Remember to lower the heels simultaneously and assume the original position as in FIG 4. For the next exercise, use the other arm and repeat. Alternatively follow twice, after a short interval of a few seconds as soon as each round is completed.

Thus, the total time for each movement and for the coördinated act of breathing suited to that particular movement, in one round of this variation of *talasana*, should be adjusted as follows (i) raise arm with inhalation, 2 seconds, (ii)





## TĀLASANA AND ITS FOUR VARIATIONS

up arm stretch with complete retention of breath, 4 seconds, (iii) lower arm backward to normal with exhalation, 2 seconds, and (iv) standstill before alternate use of the other arm during suspension of breath, 2 seconds. A complete round of one arm *talasana* should, in all, take not less than 8 seconds and not more than 10 seconds to be really effective as a posture exercise. Repeated twice alternately, it means 40 seconds for the first dynamic variant of the *palmæ*-pose.

II The second variant consists of repeating the above exercise in exactly the same way and proportion as above, except for the use of both the arms together instead of one.

III In the third variant, both the arms are used as in the above exercise (II), but the arms-raise upward instead of being in the front is *sideward*. See FIG 7.

IV When, however, the arms raise is achieved by cross signalling the arms in front of the body (arms straight) at full length from down up and over the head, as shown in FIG 8 it forms the fourth variant of *talasana*.

In effect, the *palmæ*-pose really signifies the full length body-stretch in standing—uptoe, the arms up and the fingers pointed out. The four dynamic variations specially evolved by the author merely indicate the various ways in which the arms may be used to achieve this pose. In the absence of specific directions in the yoga texts, any

one of these may be termed *talasana*. What is uniform and is of importance, however, is the maximum upward stretch, the simultaneous rise on the toes and the coördinated breathing suited to the rhythm of all movements. It must be remembered as a general principle that, under no conditions whatsoever, should the stretching exercises be followed *without* having the full breath.

The *palmae* pose and its variations aim to stretch the body, especially the thorax and the lower abdomen through the alternate and rhythmic combination of the anterior, posterior and lateral skeleton movements. These, when associated with the appropriate deep breathing, offer the best facility for an all round expansion of the lungs. In the Yogendra rhythm the emphasis for timely inhalation, retention, exhalation and suspension during particular stages of a movement, is very significant and obvious. For example, the raising of the arms upward offers maximum facility for deep inhalation, whereas, during the full stretch, the retention of breath is particularly indicated, and, similarly, during the return to normal, the diaphragm, being naturally pressed upwards, makes the effort of exhalation both easy and wholesome. As such, these movements of the upper part of the body help to increase the girth and contour of the chest, to develop the respiratory muscles and, thus, to redouble the vital index, besides elasticity, capacity and circulation of the lungs. In addition, any extreme stretching increases the venous flow and

## KONĀSANA AND ITS THREE VARIATIONS

so tends to equalize the blood circulation. Objectively what is less apparent but truly hygienic is the fact that such exercises also stimulate, stretch and massage the abdominal viscera indirectly—the alternate stretch and contraction and the raising and lowering of the thorax and the abdomen contributing to it—and tense the usually relaxed abdominal and pelvic muscles. During the years of growth as the immediate result, they have been found to promote height above the normal average.

## KONĀSANA AND ITS THREE VARIATIONS

Next in importance to height is the elasticity of the muscles and the suppleness of the body, both of which contribute largely to the graceful carriage and health of the internal organs. In order, therefore, to complement the full body stretch of the *palma*-pose by the extreme but alternate lateral stretching and contraction, one should practise *konāsana* or the angle pose and its variations.

I Assume the standing pose for general exercise, as shown in FIG. 4, with the feet nearly twenty to twenty four inches apart and the arms at sides. Keeping the legs fixed, bend only the upper part of the body above the waist to either side—the use of alternate sides being preferred—and begin taking in the breath till the arm (of the side towards which the body is bent) slides below the respective knee. Also bring the thorax, the neck and the head to a right angle with the base, simultaneously



sliding the other hand up to the armpit. For details, see FIG 9. Maintain this position with the retention of breath for 4 seconds, and reverse to normal while exhaling. Repeat by changing the inhalation and exhalation *alternately*, while bending to one side and then to the other. Pause for at least 2 seconds, before repeating another round.

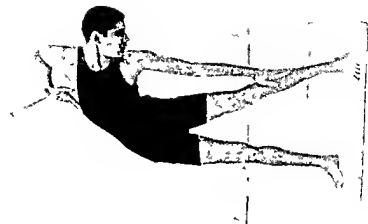
II In the same exercise (I), instead of sliding the hand under the armpit, if that arm is stretched out at full length and kept close to the respective ear, palms inward, it forms another variation of the angle pose.

What needs emphasis, however, is that during both these exercises, the oblique upper part of the body should be held precisely in a vertical plane, i.e., any tendency to incline either forward or backward to complete the pose, should be carefully avoided. Such an attempt detracts much from the maximum lateral stretching made possible by this exercise.

In these two dynamic variants of *konasana*, adjust the movements to breathing and time as follows: (i) sidewise body bend with inhalation 2 seconds, (ii) static pose with retention of breath 4 seconds, (iii) reverse to normal with exhalation, 2 seconds, and (iv) pause, before alternate use of the other arm, during suspension of breath, 2 seconds. Repeat three in one minute, with training in six breaths to a minute.



FIG. 8





## KONASANA AND ITS THREE VARIATIONS

Both these exercises are especially good for stretching and developing the ordinarily less used muscles of the side, apart from their strengthening effects on the abdominal and pelvic viscera. What happens is that, during the movements, the internal organs at the sides receive compression and massage, besides the spine—especially its lateral stretches, by mechanically bringing into action those of the muscles which are apt to be only imperfectly used.

III As in the previous exercise, stand erect with the feet about twenty to twenty four inches apart. Stretch out the arms to sides with the palms up. Lean the upper part of the body above the waist slightly backward while *inhaling*, and, when the breath is complete, lower the left arm and raise the right one (keeping them fully stretched outward, opposite to each other, the fingers pointing out) while *exhaling*. Now swing them in front of the body, like the paddles of a windmill, simultaneously rotating on the waist and turning the upper part of the body towards the right side (all the while throwing *out* the breath). Keep turning, thus, giving the body a half twist, and bend downward till the left hand touches the right toe, as illustrated in FIG. 10. Hold this position for 4 seconds during the suspension of breath (*sunyaka*), also termed the expiratory standstill.

Retaining the body twist laterally, begin *inhaling* while raising the body sidewise (right side), erect to side first and then to front (normal). When the inhalation is complete and the body is back to

## ANTERO-POSTERIOR CAKRĀSANA

measure, after the upper part of the body has received sufficient exercise for some time, the same should be followed up by paying attention to the lower part of the body

Take the usual standing position as in Fig 4. Place the hands on the respective hips with the thumbs toward the back. Alternatively, the hands may be kept fully stretched out and parallel in front of the body (with the palms down) and the squatting may be followed as described herein. From the heels to the floor, rise slowly on tiptoe, taking in the breath. No sooner the inhalation while on tiptoe is complete than begin to squat rather slowly, during one long continuous exhalation, till the thighs press against the respective calves, as illustrated in Fig 11. Hold this squatting position for 4 seconds during the suspension of breath. Then, begin taking in the breath when rising up again on the toes, until the original starting position is reached. Flatten and keep the heels to the floor, pause during the inspiratory standstill for 4 seconds, and repeat the exercise as previously, about ten rounds in two minutes.

## ANTERO POSTERIOR CAKRĀSANA

The extremities, i.e., the arms and the legs, having been given some exercise, attention should now be directed to the exercise of the mid trunk and the spine. The typical dynamic variation of *cakrasana* (the anteroposterior variety) or the wheel pose evolved by the author supplies an excellent movement for this purpose.

the starting position again, repeat alternately on the other side, i.e., the left side

The coordination of the movements to breath and time should be as follows (i) erect body slightly backward, full inhalation, abdomen relaxed, 3 seconds, (ii) lower arm sidewise during forced exhalation, abdomen fully compressed, 3 seconds, (iii) static pose during absolute suspension of breath, 6 seconds, and (iv) return to erect sidewise first and then to front, during inhalation, 3 seconds. Repeat alternately four complete rounds to a minute, with no pause and no retention of breath. The exercise, thus, provides for training in four breaths to a minute.

This third dynamic variant of the angle-pose is a fine all round exercise that combines in one act the rhythmic movements of the various parts of the body excepting the legs. The lateral twists greatly add to the intra abdominal compression which is further aided by the forced exhalation, both in turn effecting also the spine. As a hygienic measure, it is extremely valuable in the case of abdominal disorders, contracted chest, weak back and round or drooping shoulders.

#### A VARIATION OF UTKATĀSANA

*Utkatāsana* is really the semi standing pose on tip-toe. Squatting exercise may be evolved as a dynamic variation, less strenuous and more effective in its basic objective of exercising the muscles of the legs and the pelvis. As a balancing

## ANTERO POSTERIOR CAKRĀSANA

measure, after the upper part of the body has received sufficient exercise for some time, the same should be followed up by paying attention to the lower part of the body

Take the usual standing position as in FIG 4 Place the hands on the respective hips with the thumbs toward the back Alternatively, the hands may be kept fully stretched out and parallel in front of the body (with the palms down) and the squatting may be followed as described herein From the heels to the floor, rise slowly on tiptoe, taking in the breath No sooner the inhalation while on tiptoe is complete than begin to squat rather slowly, during one long continuous exhalation, till the thighs press against the respective calves, as illustrated in FIG 11 Hold this squatting position for 4 seconds during the suspension of breath Then, begin taking in the breath when rising up again on the toes, until the original starting position is reached Flatten and keep the heels to the floor, pause during the inspiratory standstill for 4 seconds, and repeat the exercise as previously, about ten rounds in two minutes

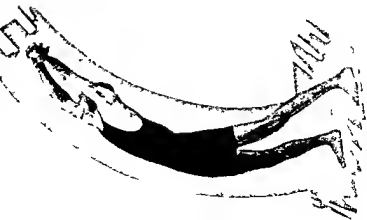
## ANTERO POSTERIOR CAKRĀSANA

The extremities, i.e., the arms and the legs, having been given some exercise, attention should now be directed to the exercise of the mid trunk and the spine The typical dynamic variation of *cakrasana* (the anteroposterior variety) or the wheel pose evolved by the author supplies an excellent movement for this purpose

As usual, take position as in FIG 4, with the feet twenty inches apart. Raise the arms upward and frontwise, keeping the fists tight and the arms close to the ears. With the arms stretched upward while *inhaling*, lean backward with the abdomen forward, then interlace the fingers of the upstretched arms above the head and give an anterior arch to the body during the retention of breath, as shown in FIG 12. To the muscle-tied, this exercise is likely to cause some discomfort or even a stretching dull pain, but it will soon disappear if one begins gradually and in moderation, stopping short of overmuch strain, to be sure.

After a pause of 6 seconds during the retention of breath—which should be the shortest in the initial stages—bend forward with the upstretched arms in position, i.e., kept close to the ears, and, while *exhaling*, touch the ground. When this is fully mastered, the bending forward technique may be conveniently altered by swinging the arms forward slowly and rhythmically during forceful exhalation. For this, continue to bend the upper part of the body forward to downward, the head reaching toward the knees, freely swinging the arms held straight upward and backward until they come to a vertical position as shown in FIG 13. Maintain this position during the suspension of breath for a period of three seconds, and then reverse the whole movement while slowly taking in the breath till the original position as in FIG 12 is reached.







## SIMPLE BHADRĀSANA

The coordination between the movements to breathing and time should be adjusted as follows (i) raise arms during inhalation, 3 seconds, (ii) static pose (Fig 12) during retention of breath, 6 seconds—begin with only one second and then gradually increase the pause, and (iii) swing body forward, bend head down, and assume position as in Fig 13, during exhalation, 3 seconds Repeat without an interval, and complete five rounds to a minute

This easy anteroposterior variant of *cakrasana* strengthens both the superficial and deep muscles of the chest and the waist generally, develops also the muscles of the back, the neck, the spine and the shoulders, and stimulates the intestines to considerable activity, particularly through the anterior and posterior stretching of the major and deep abdominal muscles which cause favourable changes in the intra abdominal pressure As such, it acts as a remedial and a preventive measure in hepatic torpor and constipation, by rousing the sluggish liver and colon to activity

## SIMPLE BHADRĀSANA

Having provided sufficient movements in standing, some posture exercises in sitting which effect particularly the pelvic organs the groin, the thigh and the sex organs may be now undertaken The one that exercises the unused or less used muscles of the thigh and the sex organs favourably is *bhadrāsana* or the throne pose

Technically, the throne pose is of two kinds (i) the simple and (ii) the complicated. For our present purpose, however, only the former variety has been discussed. Sit on the floor with the legs fully stretched out. Now, draw both the legs nearer to the body, while still keeping the legs in contact with the floor, with the knees bend outward and the soles of the feet together. With the abdomen controlled, *inhale*, and bring the feet with the toes pointing outward close to the generative organ, the heels touching the perineum very closely. Retain the breath, place the hands on the respective knees pressing them down, palms outward, and hold the pose as in FIG 14 for 10 seconds. *Exhale* and return to the starting position—the legs stretched out. Repeat without pause, remembering always to keep the upper part of the body and the neck erect.

Adjust the movements to breath and time as follows (i) drawing the heels close to perineum inhalation 3 seconds, (ii) maintain pose, hold the breath, 10 seconds, and (iii) stretch the legs to original position, exhalation, 2 seconds. Repeat four movements to a minute.

In simple *bhadrasana* the outward bend of the knees aids extreme stretching of both the superficial and deep muscles of the inner side of thigh and more especially of the interior of pelvis. The latter, in turn, also reacts favourably on the muscles and ligaments of the urogenital region, besides exercising the joints of the lower extremities.

Of relatively greater importance—from the yoga point of view—are the many postural exercises affecting the spinal column. Though strictly not posture, the three dynamic variants of *yogamudrā* and the symbol of Yoga offer excellent movements for corrective purposes—especially as replacing exercises—besides the lateroposterior stretching for loosening the muscles of the spine before undertaking the maximum spinal stretch which is the basic objective. Where the spine is inelastic, the variant II (b) should be tried first.

I. Sit on the floor—of course, the mat arranged as previously—and assume the semi-lotus pose (*ardhapadmāsana*). First bend the right leg in the knee-joint, then fold it upon itself and (with the aid of the hands) place the right heel at the root of the left thigh so that the right foot stretches over the left groin, sole upward. In like manner, bend the left leg in the knee-joint and folding it upon itself, place the left heel over the root of the right thigh in such a way that the ankles cross each other, the heel-ends touch closely and the left foot with its upturned sole lies fully stretched over the right groin. Thus, having secured the foot-lock, keep the knees pressed to the ground, tighten the feet against the thighs and press the heels firmly against the upper front margin of the pubic bone slightly above the sex organs.

Now, with the arms to the back, grasp the left wrist in the right hand and sit straight, the shoulders pulled up, as in FIG. 15, the chest forward, the

abdomen drawn in and then *inhale*. As soon as the inhalation is complete, begin to *exhale* while bending forward until you lie upon the heels in such a way as to be able to touch the floor (of course, the mat) with your forehead—not by a flat stretch but by the arching of the spine—as shown in Fig 16. Maintain this pose so long as convenient, during the suspension of breath, then, inhale and return to the original position as in Fig 15 and repeat.

In this classic variant of *yogamudra*, the movements, breath and time should be adjusted as follows: (i) original pose as in Fig 15, 3 seconds, (ii) arch forward, exhale, 3 seconds, (iii) maintain pose as in Fig 16, suspension of breath, 6 seconds, and (iv) raising to original position, inhale, 3 seconds. This arrangement permits of five rounds to a minute.

II For an increased intra abdominal compression and postero internal stretching, the second variant of this *mudra* provides two-fold dynamic exercise —

(a) First, through the firm adjustment of the heels pressing deeply upward against the lower abdomen, i.e., the right heel against the left side of the lower abdomen (or the region of the pelvic loop) and the left heel against the right side of the lower abdomen (or the region of the cæcum), the favourable intra abdominal compression could be considerably increased.







(b) Secondly, by touching with the forehead alternatively the right and the left knee respectively, instead of the floor, postero-lateral stretching of the spine and the medial muscles is particularly facilitated. This movement should be adjusted while bending forward to either side and touching the respective knee (i) alternately during exhalation, or (ii) successively during the expiratory standstill. The relative time to the movements may be adjusted, as in the first variant of this *mudrā*, with five turns to each side in 2 minutes alternately or ten turns successively—whichever is preferred to by the individual.

The physiologic advantages of these exercises are very obvious and far-reaching. They are : the lateral stretching of almost all the posterior muscles of the trunk and the neck contributive to the muscular tonus and the venous circulation of the spinal column, the deep intra-abdominal compression favourably effecting the viscera through a temporary normal replacement and the acceleration of the venous flow even of the sex organs, and the deep pressure exerted on both the cæcum and the pelvic loop stimulating elimination of the fecal contents from the two vital areas of the colon.

#### PASČIMOTTANĀSANA AND ITS VARIATION

Before the maximum stretching of the spine for the health of the nervous system on which Yoga lays great emphasis, it is advisable to follow up

the above exercises with the dynamic variation of *pascimottanasana* or the posterior stretching pose

I Sit on the mat and stretch out the legs to their full length, keeping them firmly pressed against the floor, with the toes turned inward. Now, slowly stretch out the arms parallel to the legs, palms downward. While stretching the arms forward, *exhale*, then reach out for the toes with the fingers or, if possible, pass beyond them, the palms or their respective toes. See Fig 17. If the exhalation is continued slowly and rhythmically and the abdomen is kept well drawn in, the stretching of the posterior muscles is considerably eased.

Maintain this pose for a few seconds during the suspension of breath, remembering not to lift or to raise the knees or the legs. Relax the post-tension, withdraw the hands—holding them up to a right incline with a symmetrical bend of the elbows—and *inhale*. Keep taking in the breath while the arms are being withdrawn. Then, throw the chest forward, keep the trunk straight though inclined, and resume the starting position as shown in Fig 18. No sooner the inhalation is complete than repeat, as you do in the case of rowing.

In this exercise, the movements to breathing and time are to be adjusted as follows: (1) forward stretch, exhalation, 3 seconds, (2) maintain stretch as in Fig 17, suspension of breath, 4 seconds,

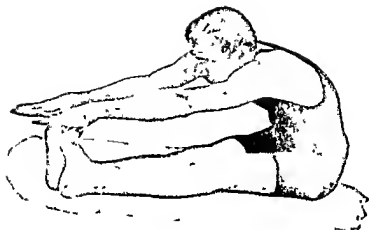


FIG. 17



and (iii) return to starting pose, as in FIG 18, inhalation, 3 seconds Repeat without pause, thus, making six rounds to a minute

This exercise has been found to be of special value in relieving constipation by the stimulation and exercise of the abdominal viscera, besides the hygienic advantage of the deep intra abdominal compression Moreover, it helps to stretch both the superficial and deep muscles of the ankles, the legs, the shoulders and the back, and is, therefore, a very good corrective for improving the deformities of the curvature of the spine It is particularly useful to those whose spine is usually stiff but who desire to regain its normal elasticity

II For the maximum stretching of the spine, however, genuine *pascimottanasana* may now be tried Whilst sitting on the floor as in the previous exercise, begin to *exhale* as soon as you bend the body forward until you reach the toes, then, hold them tightly with the fingers Keep on bending the head further and still further so as finally to enable you to touch the knees with your forehead Rest your face there, i.e., the space between the knees, and maintain this position during the suspension of breath as illustrated in FIG 19 *Inhale* and return to the starting position

The movements, breathing, and time should be coördinated as follows (i) starting inhalation, 3 seconds (ii) forward bend exhalation, 3 seconds, and (iii) static pose as in FIG 19, during suspension

of breath upto 6 seconds, but when the pose is maintained for a longer period—not exceeding 2 minutes as a daily exercise for the average man—follow slow and rhythmic natural breathing

Except in very rare cases, the initial attempt at this posture is likely to be unsuccessful due to the inelastic posterior muscles of an average person. Failure to master this pose in the very early stages, therefore, need not discourage the beginner, for the adjustments will take care of themselves gradually by working at it every day. What may, however, be positively avoided are the jerks and hasty or strenuous pulls which may cause muscle soreness or unpair even its full elasticity through injuries known as charleyhorse.

Among the healthful effects of this pose may be mentioned the maximum stretching of the spine, the favourable compression of the abdominal viscera, the loosening of the usually stiff hamstring muscles, flexion of the glutei psoas major and minor muscles besides the complete stretching, to a more or less extent of all the posterior muscles of the body. It may be noted that the reactions of this asana on the vital organs like the heart and the lungs differ widely in the case of man, woman and child as illustrated in Fig. 20.

#### DHANURĀKRĀSANA

An excellent counter pose to the above posterior stretching-pose may be found in the posture known as *dhanurākṛāsana* or the bow-curve pose. The

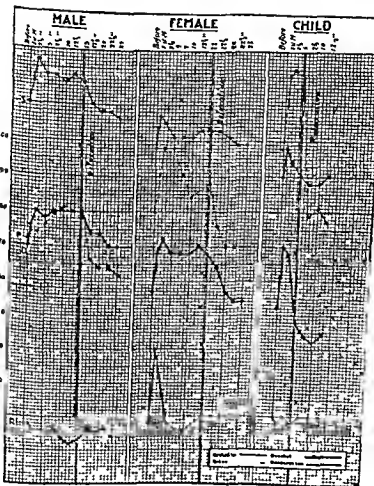


FIG. 20

object is to cause anterior stretching and posterior contraction immediately following the posterior stretching and anterior contraction

Lie prone on the abdomen. Bend the legs at the knee-joints from behind upward and fold them against their respective thigh. With the arms to the back, at full length, grasp the ankles well with the hands. Then, raise the neck simultaneously with a steady lift and pull upwards on the ankles, while *inhaling*. Now rest the entire body on only the area of the navel (umbilical region), assuming the position as shown in Fig 21. In order to derive the highest benefit from this pose, however, the knees should be kept together. Maintain this position as long as it is comfortable with the retention of breath. Then, release the hold on the ankles, begin to *exhale* and assume the starting position—prone on the abdomen, the legs fully stretched out and the arms rested on the floor. It is best to relax during pause before another round.

The movements, breathing, and time should be adjusted as follows: (i) upward pull, *inhale*, 3 seconds, (ii) maintain pose as in Fig 21, retention of breath, 6 seconds—alternatively, when sustained for not more than 2 minutes, slow, rhythmic and normal breathing, and (iii) return to starting position, *exhale*, 3 seconds. If necessary, pause for suspension before another round, 3 seconds. Either repeat eight times in two minutes or maintain the pose for the duration. The latter, indeed, is preferable, after a few months of practice.







## DHANURVAKRĀSANA

The special hygienic features of this posture are the extraordinary amount of intra abdominal pressure, due to the whole body being thrown upon the umbilical region only, the extreme stretching of the abdominal and pelvic muscles, and a steady pull anteriorly throughout the spinal column, with the alternate contraction and relaxation of the spinal muscles, especially of the ones located at the sacral end. Further, the venous drainage of the splanchnic circulation facilitates fresh supply of blood to the abdominal viscera.

## ARDHA MATSYENDRĀSANA

What is needed now to complete the requisite quota of exercise for the spine are the lateral twists of the spinal column which may be accomplished with the aid of *ardha matsyendrasana* or the partial Matsyendra pose.

While in a sitting position, press the left heel against the perineum, the leg being kept rested on the floor. Do not allow the knee to lift up from the ground. Having secured steadiness, pull the right leg and interlock it against the opposite thigh. Place the right knee under the left armpit, and twist the whole trunk laterally towards the right side, catching hold of the toe of the right foot with the fingers of the left hand. Now, with an effort of extreme twist, hold to the left thigh or the groin with the right hand, swinging the arm from behind the back and then tugging with

the fingers at the groin, palm outward. Keep the neck straight but slightly turned toward the right shoulder. Continue to exhale throughout the twist. Maintain the pose as in FIG 22, during the suspension of breath. Then, inhale while returning to the starting position. Repeat this alternately, using the right heel with a twist on the left side.

The respective movements, breathing, and time to be adjusted as follows: (i) lateral twist either side, exhalation, 3 seconds, (ii) maintain pose as in FIG 22, 6 seconds—alternatively, slow, normal and rhythmic breathing if maintained for a longer period not exceeding one minute the purpose of this course, and (iii) return starting position, inhalation, 3 seconds. Repeat alternately six turns to both the sides in two minutes as a dynamic exercise, or, as a static pose, one minute to each side.

The physiologic advantages of this exercise are very obvious. It is designed to complement the effects of the two previous postures through the extreme left and right twists of the spine. It is recognized that such lateral movements of the spine possess great mechanical advantages, viz the removal of the lateral curvature of the spine, the improvement in the replacements of the internal organs and the joints of the pelvic region and similar other defects. Through the very deep pressure heightened by the complete and forced expiration, the venous circulation in the abdominal zone is

considerably increased. Further, the alternate and reverse stretching tends to massage and exercise all the important deep and superficial muscles of the spine, and, thus, increases also the spinal and circulatory activities. When done with ease and rhythm, it loosens up the articulations of the spine, adjusts any subluxations of the vertebræ and thereby relieves the spinal nerves from the pressure consequent upon faulty habits of carriage and daily work. For maintaining tone and pliancy of the spine, it should be practised regularly.

### TWOFOLD PAVANAMUKTĀSANA

Equal in importance is the need for exercising the mesogastric, umbilical, pubic, gluteal, sacral, anal, perineal and urogenital regions. The posture which effectively serves this purpose with the minimum use of energy or strain is *paranamuktāsana* or the anti flatus pose in a lying down position.

I. First try the variant known as *ekapada* or the one leg anti flatus pose. Lie supine at full length on the floor, the arms at sides. Lift one leg—alternate use being implied—while *exhaling*; then, fold at the knee joint, clasp both the hands, the fingers interlocking over the knee, the arms at full length. Now, pull the knee up to the chest and keep it firmly pressed there during the suspension of breath. Maintain this pose for a few seconds and then return to the starting position taking in the breath. Repeat the exercise using the other leg.

The movements, breathing, and time should be adjusted as follows: (i) raise leg knee-chest, exhalation, 2 seconds; (ii) maintain pose as in Fro. 23, suspension of breath, 4 seconds; and (iii) return to starting position, inhalation, 2 seconds. Repeat without pause with each leg about four times in one minute.

II. When both the legs are used, instead of one as previously, it is termed *dripāda* or the bipedal anti-flatus pose. The general technique, however, remains the same, i.e., lie flat on the back, the legs stretched out to full length, then raise them slowly while exhaling and fold them at the knee-joints, clasp both the hands, the fingers interlocking, over both the knees, pull to a knee-chest position and press the thighs tightly upon the abdomen. Instead of repeating the exercise, maintain the pose as in Fro. 23, and follow slow, normal, rhythmic breathing, for two minutes.

When practised upon an inclined plane, this posture gives greater relief from flatulence by quickening the movement and expulsion of the intestinal flatus in a much shorter period than if it were to be followed on a level plane.

It may be observed, with regard to the above floor postures, that the abdomen in persons unaccustomed to exercise is ordinarily weak; and, in such cases, it is always advisable to start with these posture exercises *slowly* and *carefully* until the abdominal muscles have gained sufficient strength.





## TWOFOLD PAVANAMUKTĀSANA

The hygienic advantages of the abdominal exercises are many, and, with the aid of the increased intra abdominal pressure, they become doubly effective. For example, chronic constipation, hepatic torpor, flabby abdomen, sub normal functions of the abdominal viscera and pelvic organs and such other ailments which require constitutional regeneration of the internal organs are found to respond very favourably to these exercises. This is chiefly due to the special facilities which such exercises offer for the deep internal pressure, massage and stretching of the highly complicated network of the muscles, ligaments and tendons of the waist zone and the pelvis.

## SARVĀNGĀSANA

No course of daily exercises, however, is complete without, in some way, providing for the movements which offer adequate exercise to both the neck and the head, especially for the acceleration of blood circulation in the head, thus, affecting one of the most important organs of the human body, the brain—which, according to Yoga, should receive special attention in any scheme of physical education.

That there can be no physical movement which can directly exercise the brain is readily admitted, the only alternative being to bear upon the blood vessels in such a way as to bring about the desired interactions through favourable changes in vasomotoricity. *Sarvangasana* or the semi reverse

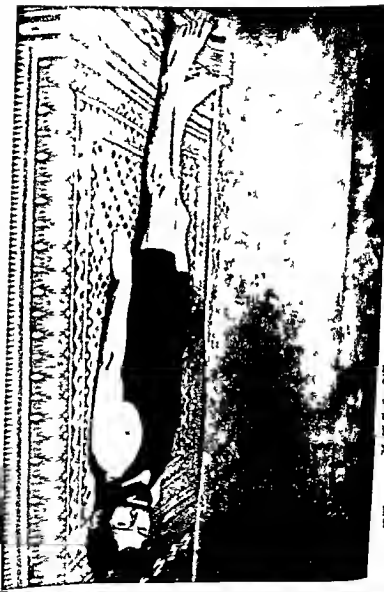


pose is an excellent means to this end, for more scientific reasons than one

Lie supine at full length, the arms at sides, with all the skeleton muscles relaxed. Now, take in a full breath, then, slowly *exhale* and raise the legs together up enough to make a right angle with the body, all the while keeping the knees stiff and the body above the hip-joint on the ground undisturbed. At this stage, still exhaling, raise the arms and hold the waist and push the body up as far as possible. Put all your weight on the hands and the arms and rest on the elbows, as illustrated in FIG 24, the legs thrown upwards. When this position is firmly secured, make an attempt to shift the hands slowly towards the chest, setting the chin in the jugular notch and placing full weight upon the shoulders, the neck and the back of the head as shown in FIG 25. Maintain this pose as long as convenient, but not longer than three minutes for the purpose of this course. Breathing should be slow, rhythmic and natural. After returning to the starting position, always take in a few deep breaths to compensate for the reactions of a head low hips high posture.

It should be made clear that, when practising this head low posture, great care must be taken to avoid any possible strain and the period of exercise should be fixed at the minimum. It is also advisable to attempt this posture first in parts, e.g., as in FIG 24, and complete the pose (as in FIG 25) only after a few weeks of initial





training. What needs emphasis is the fact that this pose should never be attempted after any form of rigorous gymnastics because the abnormal rush of blood to the brain at this stage might do more harm than good.

Among the various advantages of this posture may be mentioned the favourable changes in vasomotoricity due to the opposite exaggeration, the increased interchange of blood in the upper part of the body, especially the thorax, the neck and the head, the temporary replacement of the abdominal and pelvic viscera, the relief from congestion, through the rapid drainage of venous blood, in the abdominal and pelvic regions, and the wholesome effects of gravity pressure on the various organs of the body above the waist including the vital endocrine glands.

In constipation, dyspepsia, hepatosis, headache, giddiness, neurasthenia, functional disorders of the eye, the ear, the nose and the throat, general and sexual debility, and similar ailments the application of *sarvāṅgasana* at the clinics of the Institute for nearly four decades, has yielded very promising results.

#### SAVĀSANA

Finally, during the practice of this system of physical training, the student is advised to rest for at least three minutes if not more, immediately after the yoga physical exercises. The object is to establish muscular equilibrium as soon as possible.

through the medium of relaxation—more truly, by conscious rest after conscious effort. It means that the more perfect the effort, the more perfect is the relaxation.

Stebbins observes that "Relaxation means the conscious transfer of energy from one department of nature to another, with perfect ease and grace, after an extreme tension of body or brain. True relaxation would mean a complete resignation of the body to the laws of gravity, the mind to nature, and the entire energy transferred to a deep dynamic breathing. The complete relaxation of the voluntary muscles at once transfers the energy to the involuntary parts, so that, strictly speaking, there can be no such thing as relaxation, except in the voluntary muscles and brain. But this is quite sufficient. This transfer of energy by voluntary action and involuntary reaction produces the necessary equilibrium for the renewal of strength."<sup>97</sup>

Unfortunately, nothing perhaps has been so thoroughly misunderstood as the art of relaxation. For one thing, relaxation should not be mistaken for inertia; it also does not mean lying in a lazy manner or doing nothing. Even the so-called "decomposing" or relaxation exercises suggested by certain French and American advocates of physical training are, in reality, mere statue-posing—more in the sense of repose than relaxation.

<sup>97</sup> Cf. *Harmonic Gymnastics*, by G. Stebbins, 1892 Edn., pp. 77f.

Engel quotes from a very old German book a certain important method of relaxation in which the pupil is taught to lie upon the floor, and to withdraw all the voluntary nerve force from the extremities and thinking part of the brain, and thus to simulate death. This exercise is very strongly recommended as the beginning of all control of the body, and is very ably illustrated by a picture of a man lying limp and helpless. When long continued, it ends in self hypnosis.

It may be interesting here to observe, with reference to the practice of relaxation, that it is a common custom among the nomadic Arabs and the caravan merchants journeying between Sukim, Berber and Kharatum, as soon as they reach an oasis or any other camping place, to at once throw themselves in the shade upon the ground and then thoroughly and completely to relax every voluntary muscle. Generally, they remain in this position from fifteen minutes to an hour, or sometimes even more, according to their state of exhaustion.

In certain parts of Kashmir, it is customary for the labourers, who carry heavy loads on their backs through great distances and heights, to stop on their way near a stream and lie down in a semi lifeless state for some time, when they feel physically exhausted. These mountaineers, the wanderers of the desert, the gypsies and such other tribes are able to undertake, when occasion requires, surprisingly long journeys with very little rest.

owing to the knowledge of the art of relaxation which consists in resting at will

The ancient yogins, who are known for their self-mastery over the entire voluntary and involuntary organism, were fully alive to the many advantages of relaxation. According to them relaxation gives the maximum amount of renewed strength in the minimum amount of time. Even more than sleep, successful relaxation is the vital principle of rest which quickly recuperates or galvanizes as it were, the nerve centres, collects the scattered forces and reinvigorates the whole body. It is just as refreshing as a Turkish or a Russian bath, besides having some of the peculiar therapeutic advantages of a medical massage.

Whenever physical or mental fatigue is experienced or the mind is agitated, the practice of *śavasana* or the corpse pose is recommended by the yoga authorities<sup>98</sup>. The technique consists in simply lying supine with the face towards the sky and the arms and the legs extended passively to their full length. See FIG. 26. With that palsied sinking feeling as it is experienced during an early stage of collapse or the basal anaesthesia keep motionless like a corpse and relax gradually, every muscle of the body. This can be done in two ways: (i) either by parial or (ii) by general relaxation, as the case may be. Close the eyes as in peaceful slumber and follow normal rhythmic

breathing In due course, the act of breathing must pass beyond any conscious effort

I In the case of partial relaxation, conscious attention is withdrawn by stages from the sixteen vital zones of the body by paying attention to each part separately For the purposes of relaxation, movements of bioenergy and concentration, these parts are termed *marmasthanant* or the sensitive zones In partial relaxation, the attention—really the nervous stimuli—is withdrawn gradually in the following sequence first the tips of the toes, then, slowly moving upwards, the ankles, the knees, the thighs (simultaneously with this, the arms), the anus, the generative organs, the navel, the stomach, the heart, the neck, the lips, the tip of the nose, the eyes, the space between the eyebrows, the forehead and, finally, the brain or *brahmapura*

II In the case of general relaxation, by concentration on the incoming and outgoing breath, however, the supply of nervous stimuli is switched off from all parts of the body simultaneously in stead of by stages What is important when relaxing the muscles is that the consciousness of the physical body should be necessarily and entirely forgotten Though no special effort ought to interfere in this process, it is beneficial to incorporate semi subconsciously, deep and rhythmic diaphragmatic breathing, during the early stages of general relaxation When successfully coordinated, deep breathing enhances the sedative effects of relaxa-



tion on the nervous and, therefore, also on the muscular systems. For the purpose of this course, *savasana* may be maintained from three to five minutes according to the convenience of an individual, although this period is considered very insufficient for the practice of Yoga.

It is best to practise relaxation in solitude with a view to ensuring privacy and quietude. Then with perfect silence through that listening attitude which is directed inwards habituate the mind to abstraction by allowing respiratory acts to pass beyond conscious effort. In the case of concentration through relaxation, the synchronous void of abstraction devoid of sensorial impressions should be utilized to identify oneself mentally with the object of concentration.

## CHAPTER VI

### PHYSICAL EDUCATION FOR THE FUTURE

*Need of Biomental Coordination—Medical and Preventive Gymnastics—Choice before Physical Educationalists—Guidetable*

#### NEED OF BIOMENTAL COORDINATION

REGARDED from the yoga point of view, it may be emphasized, in conclusion, that the interdependence and correlation between the body and the mind should at no stage be overlooked during the practice of these dynamic yoga exercises. The central feature of this truism is that the foundation of all success in life—either physical, mental, moral or spiritual—depends supremely on concentration. Habituation to concentration, therefore, can be, and must be, effectively cultivated from childhood through the medium of systematic physical discipline and education. It simply means that *there must be concentration in everything which is not mechanical*, and the same holds good with regard to these yoga physical exercises.

#### MEDICAL AND PREVENTIVE GYMNASTICS

Further, it hardly needs to be pointed out that this system of daily yoga exercises has not been formulated without considerable thought and investigation, and that every detail has been worked

out with great care and founded upon the clinical experience of over a quarter of a century. These precision exercises, although they are as nearly standardized as is possible in a system which aims at individual perfection, have all the merits of medical and preventive gymnastics. The physiotherapeutic results so far obtained, whilst not exceeding expectations, have been, in the main, quite satisfactory, and remain fully demonstrated at the clinics of The Yoga Institute.

Too much stress could never be laid upon the importance of a scientifically arranged system of physical education which can be included easily in the daily curriculum of an individual with equal success to the delicate or the robust, and which can be adopted also to the ordinary conditions of home, school or college.

## CHOICE BEFORE PHYSICAL EDUCATIONALISTS

Because of their non violent characteristics affecting not only the physical but even the mental and other planes of consciousness, these yoga postural exercises have special interest for all classes of students both young as well as old and there need be no misapprehension about their doing any possible harm to any sex of any age at any time, if the other general observations suggested elsewhere are followed out intelligently.

In effect, the ancient yoga postulation that any course of non violent and non fatiguing physical education like the *asana* and *pranayama* etc., can

be utilised effectually as a direct aid to moral, mental, and psychic evolution is now slowly but surely—though a bit grudgingly—getting recognized by the leading physical educationalists, psychologists and the progressive scientists. So, once again, as Yoga rightly affirms, any well balanced and systematic course of daily exercises is to be adjudged not merely as a hygienic and body building process but rather as a great opportunity for developing healthy moral traits, mental purity and psychic stamina leading through such greater health to the ultimate realization of true Self.

Purely for good health and longevity therefore, these selected yoga posture exercises for daily practice could be fully relied upon as the best measure of personal physical education involving minimum effort with the maximum result. They, thus, meet the requirements of the average rational health seeker who is not interested in any ulterior motives dubiously associated with physical education but who is keen on maintaining the day to day positive and sedate good health whether for longevity or for higher, saner, and nobler life.

It is undoubted that, sooner than later, the world opinion will be called upon to decide whether the ideal of physical education in future should be the maintenance of such good health as endows longevity and high living commended and realized by the ancient yogins or the perpetuation of such animality as inspires militant strength for self

aggrandizement, pleasurequest and other ulterior motives unduly glorified and generally evident

# GUIDETABLE

This guidetable is purely recommendatory and provides full scope for such adjustments as the varying needs of an individual may specify. The sequence is based upon the advisability both of easy to hard movements and of the alternate use of the opposite sets of muscles. The breathing is harmonized to the maximum *respiratory reactions*, and the rounds and time apportioned to yield utmost benefit inherent in each exercise. The limitations indicate such pathologic conditions as may preclude that exercise.

When practised with precision and regularity, the hygienic results are sure to become manifest in a few months. This, in turn would inspire the essential faith and enthusiasm for its continued practice throughout the lifetime.

As such, this daily course of yoga physical exercises has been founded strictly upon the average need of an individual. For those students of Yoga who desire specific training in yoga physical culture however, it is advisable that they should have their individual courses charted out for them after a personal examination by and in consultation with the authorized teacher of Yoga. It hardly needs to be pointed out that the ultimate success in Yoga depends largely upon the right selection of such a yoga teacher.

GUIDETABLE

SEQ.	YOGA POSTURE	FREQUENCY	TIME	LIMITATIONS
1	Sukhāsana	static	1 min	arthritis
2	Tālāsana	1	2 alt	nil
3	"	II	2 "	"
4	"	III	2 "	"
5	"	IV	2 "	"
6	Konāsana	1	3 "	"
7	"	II	3 "	nephritis
8	"	III	3 after	"
9	"	III	3 "	colic
10	Utkatāsana	10 rounds	2 min	arthritis
	Cakrāsana	5 "	1 min	neurosis and peritonitis
11	Bhadrāsana	4 "	"	sciatica

GUIDETABLE—(contd.)

SEQ	YOGA POSTURE	FREQUENCY	TIME	LIMITATIONS
12	Yogamudrā	I	5 "	scoliosis
13	"	II	5 alt	"
14	Pascumottāśana	I	rounds	"
15	"	II	static	"
16	Dhanurvakrāśana	"	"	"
17	Ardha Matsyendrāśana	I	5 alt	"
18	Pavanamuktasana	I	4 rounds	colitis
19	"	II	static	peritonitis
20	Sarvāṅgāśana	I	1 mint	"
21	Śavāsana	I	2 mnts	sclerosi
22	"	II	1 "	nil
23	"	"	2 "	"
TOTAL YOGA EXERCISES 22				TIME REQUIRED 20 MINTS

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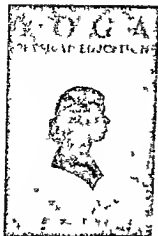
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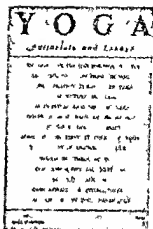
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